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THE FORUM OF EDUCATION

Index to Vol. I, 1923.



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WITH THIS NUMBER

THE JOURNAL OF EXPERIMENTAL PEDAGOGY

APPEARS UNDER ITS NEW TITLE :—

The Forum of Education.

VOL. I., NO. 1 (NEW SERIES).

FEBRUARY, 1923.

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The Forum of Education.

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The Forum of Education.

VOL. I., No. 1 (NEW SERIES)

FEBRUARY, 1923

Editorial.

UNDER the editorship of the late Professor J. A. Green the *Journal of Experimental Pedagogy* became recognised as a valuable journal of research in all types of educational problems, not only in this country but throughout the world, and we should like here to express our deep sense of the indebtedness of the Journal to the many years of devoted service given to it by its first editor.

With the present number several changes occur. In the first place it has been felt that the title of the Journal was not satisfactory. Few persons like the word "pedagogy." Nor was the title sufficiently wide. The Journal has offered, and will continue to offer, many articles which cannot appropriately be brought under the title "Experimental Pedagogy." The scope of the Journal is perhaps best indicated by the list of the new Editorial Board. We feel that we have indeed been fortunate in securing the assistance of experts in every branch of educational thought and research, who will help in the selection and criticism, and, we hope frequently, the provision of papers. As will be seen, the list includes specialists in the psychology and philosophy of education, in statistical and experimental enquiries, in the special method of teaching many branches of school studies, in the administration and organisation of education, in social philosophy, with its important bearing on education, and in the medical aspects of education. None of these aspects will be neglected. In addition, as indicated by the present number, we shall pay attention to important educational movements in foreign countries, and there will be notices of articles in foreign journals of importance to educationists in this country.

The Journal will, of course, continue to give considerable attention to experimental and statistical enquiries bearing on psychological and other problems of education, and to experimental trials of new methods, with critical accounts of experimental schools. If the study of education is to be lifted above the level of a mere interchange of opinions, if it is to

approximate to a science, it must insist that where actual facts can be obtained instead of suppositions, where an experiment can supply evidence on a problem, in all such cases statistics and experiments must be used. We say this fully aware of the fact that statistics in such complex studies as education and psychology are usually hard to gather and harder to analyse and interpret, and that experiments in the field of psychology and education are full of the possibilities of pitfalls. Some researches prove of little value because of a fatal ambiguity or flaw in method. In a sense we are, as yet, chiefly occupied with devising and refining our methods and machinery for investigation. And yet the amount of definite, well-substantiated material gained by statistical and experimental enquiry is already very considerable and throws light upon practically every problem of education.

The Forum will not only give accounts of such enquiries but will itself be a centre for their co-ordination. From time to time suggestions will be made for enquiry, questionnaires printed, and requests made for reports from teachers and others competent to give definite evidence.

Finally we would emphasize the fact that we are concerned with practical method. That is and will be for most the ultimate end and justification of scientific enquiry and psychological analysis. It is only when a method or a scheme of work has been critically considered, and its fundamental bases made clear, that it can be fairly judged or properly adopted by other teachers under different conditions. The mere imitation of externals without a grasp of fundamentals may be very far from the original.

Here the interests of the investigator or the psychologist and of the practical teacher meet, and one of our main objects will be to provide a meeting place for their common interests.

The Training Value of "Exact" Studies.

BY HELEN WODEHOUSE.

WHEN the training value of a subject is distinguished from its content value, a certain group of studies is often in the foreground ; studies which are "exact" and are expected to teach "accuracy." The group always includes arithmetic and elementary mathematics, and generally includes chemistry and physics on the one hand and Latin on the other. Often, further, it includes certain kinds of handwork, a typical instance being the making of joints in carpentry.

An exact study in this sense is not the same thing as a difficult study. An exercise in arithmetic may be much easier than the writing of an imaginative essay, without forfeiting (in most people's opinion) its claim to give more of this special mental discipline. Nor is an exact study identical with one which proceeds chiefly by reasoning. Memory-work in the early stages of Latin, and deftness of hand in the joint-making, play a considerably greater part ; and memory-work indeed is often stressed as essential. Certainly the group does not consist of subjects in which thorough understanding is expected—it cannot be contrasted in this way with the "superficial." We used perhaps to think that our pupils might have a thorough understanding of Arithmetic and Euclid, but philosopher-mathematicians have convinced us by this time of the absurdity of that idea. Every study whatever must begin with the surface of its subject, and we cannot hope to get to the bottom until in the course of immortality we have got to the end.

Could it be said that an exact study must at least be "thorough as far as it goes ?" We are superficial in this as in every other kind of learning, but we dig the surface closely and reduce it to powder, and pile the result in the proper place. Not thoroughness in understanding, which is impossible, but at any rate thoroughness in a partial mastery of a certain department, mastery partly by understanding and partly by memory-work or other means—success in doing what we set out to do—if a study demands these, can it therefore be called exact ? This is nearer, but not yet enough. Accuracy seems certainly to be a kind of thoroughness, but not all thoroughness is accuracy. The rough-digging of a garden ; the cleaning of brass or silver ; the cleaning of a room ; administrative work with its need of diligence, patience, and justice ; the careful estimate of a novelist's contribution to the literature of his time—all these tasks imply thoroughness if they are well done, but we do not naturally make much use of the words "exact" and "accurate" in connection with them. These words seem to involve the idea of a certain correspondence or fitting, a coincidence of one thing with another, which is not very relevant here.

A still more puzzling question arises in that a subject's claim to be exact does not stand or fall simply with the nature of the subject. For it seems almost universally held that, though a foreign language taught by the grammatical method may be an exact study, the same language taught by the direct method is not so. Even Latin was not an exact study for a Roman child. Further, *after a certain stage* in any subject the popular contrast of exact and non-exact seems to disappear. Such a contrast is readily made between the construing of a page of

Latin in Form III and the writing of an English composition on "My Favourite Game." But it seems much less simple to contrast a fine translation of Virgil with a page from a novel by Henry James, or with a page from Stout's "Analytic Psychology." In fact when we come to the stage of research it seems very hard to make such a contrast at all. A professor of chemistry is usually ready to claim that his subject, on the ground of its exactness as well as its content, gives better training for the matriculant than the geological department can give. But I do not believe he makes the same opposition between his colleague's research work and his own.

In Form III the Latin construing, and even the Latin prose, can be judged either right or wrong. As a schoolgirl put it: "Either the Romans said a thing or they did not, and the things they did not say are much more frequent than those they did." Now for the plain man as opposed to the professional student, I believe this "either right or wrong" is often a prominent feature in the idea of a good disciplinary study. He feels that there should not be room for dispute; that right and wrong should not be a matter of degree; that a question in such a study should be capable of answer by plain yes or no. Such a conception must evidently be limited to certain stages and departments in a study if it is not to conflict with scholarly ideals. We find simplicity carried even further when "an exact* number" is popularly used as synonym for "an integral number," and when an unintelligent student, baffled by a distinction between terms, complains of the distinction not as difficult but as "vague."

We come very close here to making exactness an equivalent of inexactness, and yet I believe this popular judgment still contains the clue to what we are seeking. For I suggest that the idea of an exact study is in the end not a philosophical but a popular idea—a teacher's idea. It is based on a particular practical convenience for teaching, and need make no defence against being limited to certain stages in a study and certain methods of dealing with them. In these stages, by these methods, the teacher has found a way of checking the pupil's thoroughness by arranging that thoroughness shall involve correspondence of one point with another. The device is as simple and as useful as the self-checking Montessori insets, themselves only an instance of the same thing. The insets provide exact study because if the child has gone wrong the last inset won't fit. Arithmetic is exact because one's answer must correspond with the answer at the end of the book. Latin declensions are exact because the teacher can blame the pupil for disagreeing with him.

The device is particularly useful when its working can be made automatic in the process of the study itself. This happens in so far as the subject can be arranged as a *chain-study*, in which each step must be made secure before a subsequent step can be successfully taken. Intrusion of outside factors (such as the weather when we cultivate a garden), and opportunities for making fresh beginnings or fresh contributions from our own intelligence (as almost anywhere in the study of literature), both hinder a subject from being made into a good chain. But several of the exact studies (elementary Latin for instance) have also

*As in, "A ought to go into B an exact number of times."

been made into chain-studies which force the student very skilfully to depend on his own past. These two dependent qualities then work in combination with great effect. By reason of the exactness every step is definitely right or wrong, and by reason of the linkage the whole series of steps is checked again and again, and a special part of thoroughness is enforced with great ease.

Both devices are certainly most useful, and we are not likely to underestimate their value. Nevertheless, they are rather remote from ordinary life. In most of the daily activities of a man and a citizen thoroughness cannot be checked in any such simple way. It may be said that there is always a demand for accuracy in following directions, or in achieving an end precisely marked out beforehand; but these conditions of action are not really very common. In actual life in a family or larger community, and in actual work in a trade or profession, do we not find ourselves chiefly occupied in filling in directions that cannot be precise, and remodelling our aims as we go along; in doing the best possible under given circumstances; in trying to solve problems that have no answers in the book; in trying to be thorough where we cannot be exact? If this is so, then, provided that a study is sufficiently difficult and absorbing, may not "inexactness" make it a better preparation for life? At any rate it seems that we may be shirking our real business if we make excessive use of subject-matter where this trouble-saving check can be applied. And the same is true of the chain-work, though this lies outside the strict limits of this paper.

We must reiterate that, even with simple material in elementary stages, accuracy is only *part* of thorough work. Even elementary arithmetic is not being well done unless besides accuracy you have (1) good method, (2) rapidity of calculation. Even "thoroughness" cannot mean "doing everything," and accuracy concerns only one part of that part of "everything" which we might do. In fact, when we so teach a subject as to make it pre-eminently exact, what we are doing is deliberately to limit perfection and so make it attainable. By confining ourselves to simple examples, and by neglecting a wide range of differences in speed, we make it possible for a considerable number of children in a well-trained class to get full marks for an arithmetic paper. In an English paper the other requirements are too many and too essential to be neglected, therefore full marks in English are very rare.

The limiting of perfection for the sake of exactness may indeed be very drastic, and come well within the danger zone for scholarly ideals. The construing of Latin word by word, which seems still to be enforced in the lower forms of many schools, and the traditional formal logic with which we still often begin philosophy at the University, are simply bad translations and bad statements of argument. It is only by such treaties with evil that we make conventional exactness possible. Drop the convention, and the translation and the logic fall into line with literature and music and ordinary human life, and are seen as the slow working out of ideals which in their perfection can never be attained.

On the other hand, we may say that exactness in study is not only a convenience for the teacher but a merciful shelter for the pupil against a cruel and abstract idealism in his elders. Ruskin asks in "Præterit" for an education which shall teach children to obey orders with the

precision of slaves. That is, we relieve them of obligation to the virtues of freemen—no common sense or attentive judgment, no adaptation to circumstances, is to be asked of them ; we shall be satisfied if they copy correctly what we have drawn and get the answers that we put into the book. We may or may not approve of this doctrine, but it is more humane than another precept in the same paragraph, that every girl is to learn to cook “exquisitely” all kinds of common food. In similar reference we have the old moralist rhyme for children :

“ If I were a cobbler, it should be my pride
The best of all cobblers to be.
If I were a tinker, no tinker alive
Should mend a tin kettle like me.”

For the person who has not tried the work, perfection seems to need nothing but good-will. The unfortunate child has to try it.

We have arrived then at the conception that a study is exact only when the thoroughness required has been conventionally limited in order that most of what is still wanted may be covered by a checking device. It has the advantages and the disadvantages of exacting less than other studies in order that what is left may be easily tested and easily approved or condemned. Let us now go on to ask whether such studies teach accuracy.

We must distinguish of course between success within the boundaries of a subject and success outside. Otherwise a study may seem to train certain powers merely because it shows them in successful working, while it stops short of the point where the difficulties begin. A head-master, looking at English papers sent in for the Higher School Certificate, said they had convinced him of the inferiority of English as a training subject ; they showed none of that “ strong dogmatic guidance ” which was seen in the Latin and mathematics. Now woolliness in Latin and mathematics at the school stage is easy to point out irrefutably, easy to plough for, and fairly easy to diminish or remove by good teaching and hard work. The woolliness shown in an English paper is probably not a matter of grammar or of straightforward reasoning ; it lies deeper in a region of more complex thought, and it is far harder to diminish appreciably. The Latin studies may never get so far as to test or expose the weakness in the place where English reveals it. In this respect the Latin paper may be ordinary sunlight where the English paper is an X-ray. Sunlight may cure a diseased bone sometimes, but we must not attribute a cure on the sole ground that we cannot see the lesion.

Does it cure here ? If people have learnt to be exact within these subjects, will they be exact outside ? We had better inquire how accuracy is produced.

“ Habits of accuracy ” is a popular phrase which needs examination. Are we concerned here with something which is largely a habit in itself (like, for instance, a particular gait in walking), and, if so, how far is that habit the same habit where different departments are concerned ? Or are we rather concerned with something which, like physical health, is not a habit in itself but a result of other complex factors, some of which are habits and some not ? It seems to me that the latter account is clearly the true one. We say that a man habitually hits the mark, or that he has a habit of success, but we say it as a metaphor,

almost as an epigram. The real habits, and the natural gifts with which they combine, lie behind these results—the man is confident and steady, he has knowledge and skill beyond his fellows, and he takes care. Accuracy is partly a result of habit, and it partially tests habits, but it is not a habit itself.

If accuracy is not a habit, neither is inaccuracy. Habits leading to inaccuracy exist in plenty, and there are plenty of "inaccurate habits," such as the wrong spelling of special words. Further, there are plenty of negative factors in the *absence* of habits which would help accuracy if they were present. But inaccuracy, like wrong-doing, is thus a result of multitudinous causes, some of which are habits and some are not; it is not a habit itself. The multitudinousness of the causes may have educational importance as a practical safeguard. It seems, for instance, that if beginners in typewriting are allowed to sacrifice a good deal of accuracy for the sake of acquiring speed, the result can be made just as accurate in the end as if a high standard had been insisted on from the beginning.*

If accuracy is a result of multitudinous causes, of what kind are they? Let us ask first, more generally, what lies behind any sort of success, and what chance it has of transference to other departments. Causes of success may be grouped as :

- (1) Knowledge-and-skill factors.
- (2) Valuation factors—ideals and standards, and persistence in following them.
- (3) General vitality, giving more command over the first group, and putting more vigour into the second.

It is generally agreed that the knowledge-and-skill group transfer their effects from one department to another according to the amount that the two departments have in common. A knowledge of Latin grammar is some help towards learning Greek grammar or French grammar, because the subjects overlap. Practice in billiards might conceivably improve our rifle-shooting, but this we can only tell by trying, because the common ground on this level is hard to estimate by direct means. A general knowledge of a subject serves as guide and check to our casual memories and unproved beliefs. It is probably this, rather than a difference in standard, which makes the conversational assertions of an educated man on the whole less wild than those of an uneducated one. Where two departments are very different in nature, there will be little or no transfer of power. A woman by dint of practice may arrive at exquisite deftness in embroidery, yet become none the more exact in reporting a story she has heard.

The transference of the valuation group of factors depends on our feeling common values in the two departments. Interest awakened in cricket may become a general desire to be good at out-door games. A standard of neatness acquired in mathematical work, provided that the worker attends to it as such and is not merely drilled into it as something undetachable from the rest of mathematical needs, may be extended into a standard of neatness for his written work in other subjects. The extension is always departmental, dependent on heading and motive.

* Cf. *Brit. Jl. of Psychology*, Dec., 1921.

To form a really general idea of thoroughness would be as impossible as to take all knowledge really for one's province. Most of our activities must always have a low standard in order that the standard of a few may be high. All day long we are doing things without trying for thoroughness or finish or giving any special attention. We eat our meals, we walk up and down stairs and could not say afterwards on which spots we had set our feet ; we speak without noting the inflections of our voice ; we note the lapse of time without troubling about the seconds. Out of the mass of such dim activities we select a few to be seriously attended to, and the amount and kind of attention depend again on the nature of each of the few and the purpose involved in it. Strengthening of purpose and clearing of standard in one department will help another department only in so far as the purpose in both and the concept of both are the same. Being in time for a 11 o'clock school lunch helps a boy to be in time for a 7-30 home breakfast if he gathers both into a desire for a punctual and orderly life, but not if the first is governed only by a desire to keep out of trouble at school. Carefulness in needlework may come from a visual æsthetic ideal ; if so, it need have no effect on our standard for Latin grammar. A house-proud northern housewife may make every corner in her house shine with cleanliness, yet she may have no such standard for the persons of her children, at any rate where they do not show. A broad complex ideal such as that of respectability may have wide effects in preventing very low standards ; a respectable person will not let house or possessions or children be very dirty (though the standard may not cover the state of the drains). But anything above this moderate all-round level is likely to involve a special ideal of its own. Cleanliness on the whole is highly specialised and interacts very little with other ideals of thoroughness. And sudden baffling limits appear in other standards of the kind. Stephen Graham describes the ideal of smartness established in a regiment of Guards. Part of such smartness is the polish on spoon and fork ; and a really smart soldier would have a duplicate spoon and fork always polished, while those he used were left unwashed.

The wide application of a standard is usually supposed to be the mark of a higher type of mind. This is true on the whole, but not always, for there may be stupid generalisations as well as stupid failures to generalise. Care for detail where details are important, for instance, becomes sometimes a pedantic or fussy care for detail where the details do not matter. And certain generalisations, such as an ideal of universal thoroughness, would be stupid to the point of suicide. The occasional preacher of it saves himself by neglecting the first requirement of what he preaches—thoroughness in thinking out what the preaching involves.

The transfer-power of the third factor in success—general vitality—would seem to have rather different laws. A sufficiently difficult piece of work, which so fits our mind as to absorb us, has (as Dr. Montessori points out) a markedly health-giving effect. If then we turn to another piece of work which also can absorb us, this will profit from our greater health of mind. The amount of improvement depends in this aspect not so much on the close connection of the two subjects as on the fittingness of both. Unless the first fits well vitality will not be increased, and unless the second fits well little or none of the increased vitality will flow into it.

Turning now to the particular improvement in which we are interested—that of accuracy—we find it probable that the vitality-factor is important. Accuracy almost anywhere seems quickly affected by any mental ill-health or depression. (This is borne out by experiments showing that carelessness is better treated by a system of reward or commendation than by a system of punishment.) If this is true, then it should be improved by anything which improves our general mental health, and, amongst other things, by hard work at any subject which really interests us (neglecting complications such as that of an overwhelming interest which for the time being drains all available vitality into its own channel). But this gives no special claim for exact studies as such. Can such a claim be derived from examining the other factors?

To increase the power group for accuracy in B by means of practice in A, would seem from our previous discussion to depend on the close relation of B to A, and not on A being itself a subject in which accuracy was stressed. But it may at first sight seem different with the valuation-group, in which (though the line of division is doubtful) we might include the "power" of upholding the adopted standard or following the conceived ideal. Ought we not to find (it may be urged) that practice in an exact study will make one value and pursue an ideal of accuracy elsewhere?

In answer to this I would say that, as accuracy is not in itself a real habit, so I do not believe that in itself it is capable of constituting a real general standard or ideal. It is the result of this or that standard; it is the test of whether some standard has been attained; and within a narrow department it may even itself for the time be the object at which we aim. "I will set each stitch at exactly the same distance from the preceding stitch." "I will repeat this list of nonsense syllables until I can reproduce them exactly as they stand in the book." But surely, when we try to generalise, it is not this correspondence-element which survives. The first example is a part of visual beauty—"I will make this garment as dainty and exquisite in structure as I can"—and the natural expansion is into the broader ideal of beauty and art, not into other kinds of exactness. The second instance is no more than a means to a scientific testing of the nature of memory; it is not an ideal valued for itself even for a moment. And so on with other examples. When on a previous page we discussed the transference of ideals, they were ideals of thoroughness rather than of accuracy, and this I believe is right. Though thoroughness is limited, yet it is more capable of generalisation than accuracy is. I find it possible in my own experience to work with some such idea as "tackling the job," "doing a good day's work," "doing in a business-like way what one has to do." But I find it quite impossible to form a working ideal of correspondence for the sake of correspondence—accuracy as such. And if I in middle age do not form such an ideal either explicitly or implicitly, I am sure that the boy or girl who does so must be very rare.

I think we may form a conception of accuracy-as-a-means-to-an-end. When an exact study is also a chain-study it may usefully enable a thoughtful student to recognise the nature of a chain, to expect to meet it in other studies, and to dispose himself accordingly. I quote a student's testimony to this effect:—

"My success in Latin developed in me this attitude of mind towards everything—that if ever I hoped for success I must master all elementary

knowledge, however dull and difficult; that all preliminary details form the foundation for further instruction, and that if the foundation is weak no sound progress is possible. I applied this to school subjects—e.g., mathematics, which I hated, and also to music, which at first made no appeal to me since it consisted of uninteresting finger exercises and scales. If ever I am commencing a new study and am persuaded to give up because of the dryness of the early work, my mental argument is always consciously this: Latin was at first somewhat dry and difficult, but it was mastered, and has it not been worth while? May not this also be worth while?"

It is worth noting that success and satisfaction play a considerable part in the educative result. This student did not gain that result from her mathematics, though the exactness and the chain-arrangement of mathematics are not inferior to those of Latin. It was necessary to learn from experience, not merely that success in our future may depend on our past, but also that a virtuous past may be a fair guarantee of a successful future, and further, that this success may be worth the trouble it has cost.

The testimony of another student is interesting because it seemed to himself to show an ideal of accuracy as an end. He first reported merely that his school work in science had made him more accurate in other subjects, for instance in French. When I asked for details, after some days he sent me an account from which I extract the following:—

"When I first went to the secondary school I was a small and timid boy, and terribly afraid of two masters, those for science and French. As time went on, however, I lost my fear of the former master and began to take a real interest in science. During the third and fourth years I came to love science better than anything else. I tried then to work at other subjects, and especially at French, in the spirit of science, 'as accurate as possible under the given conditions.' For instance, in translating from French I adopted the habit of using the big French dictionary instead of the glossary at the end of the book. I began to do the work more from the motive of accuracy for accuracy's sake than from fear of the master. Though I don't think I can claim to have consciously derived the method from science I think I can claim that science to some extent improved it and gave it a better 'tone.'"

I find three points of interest in this reminiscence.

First, the ideal he forms is not the simple one of accuracy at all. The formula is "in the spirit of science, as accurate as possible under the given conditions." His science has been taught in so scholarly a way that, far from acceding to the popular ideal of "being content with nothing that is not exact," he recognises that exactness is ordinarily impossible. "As accurate as possible under the given conditions" sums up the *thoroughness* at which he aims, and without which he is not content.

Secondly, this reading, that the ideal was really one of thoroughness and not of accuracy as such, is supported by his use of the big dictionary. Had his aim been simply to attain the nearest correspondent to the French word in the book, he might well have trusted to the glossary at the end. But he wished to understand the word for himself, in the fuller light given by its alternative meanings.

Thirdly, I would call attention to his attitude to science. "I began to take a real interest in science. During the third and fourth years I came to love science better than anything else. . . . Though I don't think I can claim to have consciously derived the method from science I think I can claim that science to some extent improved it and gave it a better 'tone.'" I have no doubt that it did so. And so, I would urge, would any worthy subject of study, taught by a scholar and good teacher, giving room for hard thorough work, and *fitting this pupil's mind* so well that he could find in it real interest and success. He speaks inaccurately when he says "I began to do the work more from the motive of accuracy for accuracy's sake than from fear of the master." More nearly, he is beginning to work well from the love of good and thorough work, having now known the joy of such work from the inside.

I suggest then that the experience of this student need not really qualify my conclusion. The experience of the one first quoted is relevant as showing the conscious use of accuracy as a means, but the transference of this aim is limited to chain-studies, or to processes which are expected to reveal a chain. Further transference, I believe, would show the supervention of a larger ideal, and a different ideal—not that of accuracy for accuracy's sake.

The question is extremely important. For though a standard need not always be put into so many words in order to be generalised or transferred, yet it cannot be generalised or transferred if it is not formed at all. My claim is that for the ordinary person, however well drilled in exact studies, the ideal of accuracy as such is not formed at all. *The "exact" group of school subjects has no special claim*, except that point of convenience, that they enable a certain kind of thoroughness within their borders to be easily and indisputably checked. And this convenient point has its disadvantages also, as was pointed out before.

In conclusion, I would remind the reader that what we started from was not an examination of what meaning a name ought to bear, but an examination of a group of school studies which are habitually given that name. If we had started on a different essay, and had read into "exactness in study" the meaning of a continual effort after a wider and deeper and more subtle and refined understanding of the world, then indeed our conclusion might have been very different. For we should then have been examining the value of critical philosophy. I do not know that anybody claims that the shortest way to philosophy is the way of Latin grammar.

A Nineteenth Century Experiment in Education : the work of Matthew and Rowland Hill.*

By SIR MICHAEL SADLER.

I.

In the main, education is a conservative thing. Its chief task is to link the generations each with each. Human happiness depends in some measure upon a stable tradition. Schools and Universities are part of the glue which holds society together. It is not to their discredit that for centuries their prevailing tone has been conservative. We should soon get tired of unchartered freedom if everybody got up every morning, as Dr. Arnold of Rugby in some critical years of his life is said to have done, regarding everything as an open question.

But because education is by habit conservative, it would become fossilised but for its innovators. Innovation is its safety valve. Through innovation it is able to be forward-looking to the future as well as loyal to the past. Sometimes the Government turns innovator in national education. This has happened in France, in Germany, and, at rare intervals, in England. But individual innovators have done more than Governments to disturb the complacency of established systems of education. No one criticises an educational innovator more severely than his fellow-teachers. All professions are self-protective. Educational innovators always appear in great numbers at times of revolution. They are a sign of revolution. Some, like Rousseau, are a presage of revolution. Others, like Arnold of Rugby, are a result of it. During the last twenty years there have been more educational innovators in Europe than at any previous time. Revolutionary weather suits them.

Apart from the wisdom or unwisdom of their ideas, educational innovators are of three sorts. Some write brilliantly about education but do not themselves practise the art of teaching in school or college. Thomas Day, the author of "Sandford and Merton," was of this kind, as was Herbert Spencer. Others innovate within an institution but refrain from writing books about their innovations. Dean Cyril Jackson, of Christ Church, Oxford, was one of these. Others, and they are the most important, not only work out their new ideas in the teaching of children or young people, but also put on paper the results of their experience and their interpretation of its significance. Of these, Huxley was one, Richard Lovell Edgeworth another, and Pestalozzi a third. The first practised the art of teaching in a Government institution ; the second practised it in a large family circle and in a private school ; the third practised it first in a Government school which had been hurriedly provided for his use but afterwards in independent schools where he had larger liberty for experiment. For many innovators, independent schools, free from control by Government or by local authorities or by aggregate public opinion, have been as it were laboratories in which new methods of education can be tested.

The educational innovators of whom I speak this afternoon were Rowland Hill (1795-1879) and his elder brother Matthew Davenport Hill (1792-1872). Matthew Davenport Hill afterwards distinguished himself

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as a reformer of the criminal law. Rowland Hill afterwards won the gratitude of the nation as the original conceiver of the uniform penny rate of postage and as the indefatigable organiser of the modern post office. In youth and early manhood, the two brothers, helped by a third, were teachers in a private school. The private school belonged to their father, Thomas Wright Hill (1763-1851), who bought it in 1803 from Thomas Clark, a disciple of that great advocate of free experiment in education, Dr. Joseph Priestley. The school was in Birmingham, for sixteen years at Hill Top and then at Hazelwood. The main body of the school was removed in 1827 to Bruce Castle, Tottenham. It was a school for boys. There were boarders and, at any rate in Birmingham, day pupils also. At the time when the creative activity of the brothers was showing itself most brilliantly in the educational field, the school contained about 70 boys, and Matthew Davenport Hill was 30 years of age, his brother Rowland being 27. When Matthew and Rowland Hill worked out their innovations in school technique, Thomas Arnold was still living in Oxford as Fellow of Oriel. In 1822, when the Hills published anonymously their book, "Plans for the government and liberal instruction of boys in large numbers, drawn from experience," Thomas Arnold was keeping at Laleham what in effect was a small private school for older boys. In the year in which the chief part of the Hills' school was transferred to Bruce Castle, Tottenham, Thomas Arnold was appointed Headmaster of Rugby. During the years 1822-7 (critical years in the development of Arnold's thoughts on education), the Hills' school became famous. There was an article on it in the *London Magazine* for April and May, 1824, and from its style I think the author of that unsigned paper was Thomas de Quincey. The *Edinburgh Review* published a good and judicious essay on the school in January, 1825. The writer of it quotes fully from the letter of a friend who had recently visited and inspected the work at Hazelwood. Dr. Birkbeck Hill in the Dictionary of National Biography attributes the article in the *Edinburgh Review* to Basil Hall. Many of the great educational personages of the time went to see Hazelwood school at Birmingham. The then Marquess of Lansdowne, Lord Brougham, De Quincey, Malthus, Joseph Hume, William Wilberforce, Nassau Senior, W. J. Fox, Babbage, Lardner, and Robert Owen visited it. "The number of visitors is immense," Matthew Hill wrote, "it is quite a nuisance. Sometimes three or four parties at a time. Not a day without some." Lord John Russell sent to Hazelwood on a visit of inspection Dr. Maltby, who was afterwards Bishop of Durham. George Grote went there and heard the boys construe Homer. Two of Mrs. Grote's nephews were taken from Eton and sent to Hazelwood. A Swedish professor came from Upsala and stayed a month at Hazelwood. Mr. J. S. Thornton, whose knowledge of Scandinavian education is profound and fruitful of suggestion, reminds me that a *Hillska Schola* was founded in Stockholm. Most picturesque of all visitors to Hazelwood was Jeremy Bentham. He came in September, 1827, and went away delighted. Bentham would take nothing about a school on credit. He had sent an inspector before he went himself. He paid for two boys whom he sent there as pupils. And he posted to the *Hazelwood Magazine* "with Mr. Bentham's love to all the good boys thereof," a newspaper cutting labelled An Active Schoolmaster, which recorded that recently there had died in Spain a schoolmaster who had been fifty-one years head of an educational institute. One of his ushers calculated that in the course of his labours this old gentleman had given 911,500 canings,

124,000 floggings and 136,000 tips with the ruler. It was further calculated that he had made 700 boys stand on peas, 600 kneel on a sharp edge of wood, and 5,000 wear the fool's cap. One of the Hills' chief principles was mitigation of the severities of school punishment. So great a stir did the Hills' book and their success in trusting boys with responsibilities in discipline and self-government make in the English world of letters during the years 1822-27 that it would be singular if Thomas Arnold, then himself teaching at Laleham, failed to hear of what was being done in this private school at Birmingham. As his much loved pupil Theodore Walrond wrote, "one of the chief characteristics of Arnold's work at Rugby was his trusting boys with confidence." At any rate Arnold's mind was at work on the same problem which preoccupied Rowland and Matthew Hill.

Like the Edgeworths, the Hills as a family did great things for the improvement of education. As in the case of the Arnolds, the educational gift of the Hill family was hereditary. Matthew and Rowland Hill began the work of educational reform when there was widespread dissatisfaction with the methods and the discipline of most English schools. "Those who look back upon the state of English education in the year 1827" wrote Stanley in 1844 (and his remark applied even more truly to the years immediately preceding that date) "must remember how the feeling of dissatisfaction with existing institutions which had begun in many quarters to display itself, had already directed considerable attention to the condition of public schools." Cowper, Zachary Macaulay, and Southey were among the critics whose strictures reflected a general desire for a new spirit and a new discipline in English education. Matthew and Rowland Hill, themselves the sons of a schoolmaster, felt the need for change. Both began to teach very early in life. Rowland's first considerable purchase was Maria Edgeworth's "Parents' Assistant," for which he gave 15s. out of his tiny earnings. Maria Edgeworth's was a name he could never mention but with gratitude and respect. His nephew asked him what books had chiefly formed his character. He replied that he thought he owed most to Miss Edgeworth's stories. He read them first when he was eight years old. He told Dr. Birkbeck Hill that in those early days he had resolved to be like the characters in her stories and to do something for the world. "I always had a very strong desire to do something to make myself remembered." At eight, he was set to teach some smaller scholars to read. They read Mrs. Barbauld's "Early Lessons." They came to the word mezereon. Rowland Hill was ashamed to own that he did not know how it was pronounced. "With great gravity," he tells us, "I informed my class that this was a word that no one knew how to read. So far as I can remember, there was no Doubting Thomas present."

At eleven years of age Rowland Hill was called in to help his father and his elder brothers Matthew Davenport and Edwin as a teacher in the school. "Young and inexperienced as I was," he wrote, "I had inferiors both in age and knowledge, some of the pupils being not more than six or seven years old."

He had been brought up in a home which was full of intellectual and practical stimulus. His father was an able and cultivated man, his mother a woman of great practical wisdom and strong character.

The Hill family derived much of their practical ability from their mother and a wide intellectual outlook from their father.

When Rowland was twelve he attended some lectures by his father on electricity and resolved to make an electrical machine for himself. This, in spite of great difficulties, he did with industry and inventive resource. He learnt much astronomy from his father during evening walks and was fond of using his father's telescope. We are told that no sooner had Rowland learnt anything than he set about teaching it; learning and teaching generally went on hand in hand. His father opened out many lines of thought to him and his brothers. "At an early age," said Rowland, "we were all fond of reading and became studious, assisting one another and obtaining, when required, affectionate help from my father." When they were out walking, the father would work out problems in geometry for his sons, describing figures in the dust of the road with his walking stick. Among other subjects which Rowland Hill studied in youth were navigation, architecture, mensuration and stage management. For a home theatre, where one of his brother's plays was acted, he was architect, carpenter, scene painter, and manager. The boy was so handy that he became the family carpenter, clock-cleaner and locksmith. He made instruments to illustrate his father's lectures to the Birmingham Philosophical Society, devised a water clock, and became skilful in the construction of maps.

Gradually the young brothers took the leading part in the management of their father's school. Matthew improved the teaching, Rowland took charge of the organisation of the school and the management of its accounts. Their father was easy-going and rather apathetic, but not jealous. In circumstances in which many a man would have resented the energetic initiative of his sons, Thomas Hill, as his son wrote later, "showed no signs of vexation nor was ever jealous of any of us. He used only to express a fear that I had got too much on my hands. So far from being jealous, he was proud of my doing the work and used to boast of it to others."

Matthew Davenport Hill had great literary gifts. Rowland's chief strength lay in his fertility in mechanical resource, in his perseverance, and in his power of effective organisation. But he had little systematic preparation for some parts of a teacher's duty. "When I left school," he wrote in 1819 when he was already in a position of great responsibility in his father's school, "I was proficient in no single thing. I could not write fit to be seen, I understood very little of arithmetic, and was not master even of the paltry art of spelling. Of classics and of the higher branches of mathematics I was equally ignorant. I believe drawing was the only thing I understood even tolerably. Every attainment I am now master of, I have acquired since I became a teacher, and for the most part by myself . . . Fortunately I have in a tolerably high degree the faculty of invention. This may be in a measure the effect of education, and if I have acquired this only, much has been done for me. Many a time have I given lessons, both at home and abroad, on subjects which I began to study with my pupils. Frequently I have solved a problem of which I had never heard except when asked by my pupil to explain it to him . . . Circumstances forced me to study many subjects, and I may easily say that almost all I know has been acquired in teaching others."

Like Dr. Priestley, whose influence was strong in their family, the two brothers aimed at giving an education which would be an effective preparation for civil life, including that of a business man. They analysed in the second edition of their book (1825) what is called a talent for business and showed that their system of training was favourable to the growth of this kind of capacity. Fundamental, because he who is to command should first learn to obey, they deemed "punctual, intelligent, unhesitating obedience." Rigorous punctuality was enacted by them on principle both from masters and boys. They valued brisk precision for its effects on mind and character, and because "little savings of time, when multiplied by the number of persons affected, amount in the aggregate to a very important sum." The habit of executing orders with intelligence they knew to be more difficult to form than that of punctuality. "It cannot be directly taught, but must result from the love of excellence, from a desire to oblige and from the general habit of observation and reflection."

On the means of inducing these three qualities, Matthew and Rowland Hill state the conclusions to which they had been led by experience. (1) "The love of excellence, we have had reason to believe, is greatly promoted in the minds of young persons by letting them see the care and anxiety on the part of their teachers that every occupation in which the scholar is engaged, whether important or unimportant, should be carried on in the most perfect manner of which it is capable. Few minds are so constituted as not to be gratified with excellence, although the labour of its production may sometimes overbalance the desire for its enjoyment; but when this labour, from custom, has become light and when the enjoyment from being habitual has become a necessity, much has been done to ensure the permanent good taste of the pupil." (2) The desire to oblige, they argue, must proceed entirely from the general cultivation of the good feelings. "The absence of painful and very degrading punishments, of unnecessary coercion and, more than all, of injustice, on the part either of the masters or of the stronger boys, must allow a free scope to the kindly feeling both of teacher and pupil." They also attached importance to keeping open so large a number of paths to distinction in the school that "every boy to whom nature has not been extremely niggard can find some employment in which he may earn reputation among his school fellows." (3) Observation and reflexion, they remark, which are necessary to the power of intelligent obedience, also depend on the general state of the pupil's mind. "They cannot be induced for a particular occasion but must grow with his growth and strengthen with his strength." For this reason they made a strong point of "exercising boys' minds upon subjects at once interesting to them and completely within their grasp." For example, instead of trying to get boys to consider the excellences and defects of Greek or Roman constitutions, subjects in which they cannot take an intense interest at an early age, they set them to learn the constitution of the school to which they belonged and gave them by practical experience clear and vivid ideas respecting the powers and duties of juries and committees in the work of government. They therefore prized the little constitution of Hazelwood school not only as a valuable form of school organisation but also "as furnishing materials for a high and important department of instruction." By all means in their power they endeavoured to make

the boys put their minds into what they read, and, instead of swallowing what they got from books "with undistinguishing mental deglutition, to examine, criticise, question and vivify what they read so as to learn how intelligently to use books instead of being dominated or drugged by them."

They had no narrow view of the intellectual duties and moral opportunities of a life of business. They believed that "the same general qualities which are required for a minister of state or for the commander of an army would be highly advantageous to the agriculturist or the tradesman. Rightly understood, the word 'business' includes everything which regards the communication between one man and another."

While trying to fit boys to render prompt, intelligent, and cheerful obedience in subordinate positions, the two brothers did not forget to train them also for the duties of wise command. "We have provided many opportunities for teaching by practice the art of commanding and, by consequence, of obeying, and that at an early age; and we have found that a familiarity with power tends to show it in less glowing colours than those in which it usually appears to the young." The first element, they point out, in a good command is that its execution shall be within the capacity of the instrument. "A knowledge of what can be effected by others must in some measure be drawn from experiments made in our own persons. The power of executing *in propria persona* is also useful as enabling the director to give the best species of proof that orders which are objected to as impossible can be fulfilled." Other excellent qualities in a command are exactness and perfect intelligibility. Therefore the brothers framed all their own orders with great care and precision, and gave the boys practice in making rules which the whole school had to obey. Not less important is the habit of punctually ascertaining that an order has been fulfilled. "No ambiguity is permitted to exist either with regard to the person who is to execute it or with respect to him who is responsible for seeing it executed." This habit of seeing that an order had been duly executed by the responsible person in the right way was characteristic of Rowland Hill in his administration of the Post Office in later years. Again, in order to choose the right agents for the execution of his orders and to adapt the duties of each subordinate to his capacity, a directing officer must have the power of estimating the various qualities of those around him. "In this point of view, it is of great advantage to a boy to be a member of a large community. The want of a sufficient number to furnish materials for extensive observation of character is among the most glaring deficiencies of a home education." They so designed the arrangements of the corporate life of their school as to give some facilities for the study of character. That ascendancy over the minds of others, which enables some persons to mould all around them to their purposes, and is an invaluable acquisition to the man of business, they were disposed to trace chiefly to "agreeable manners joined to firmness of purpose." "We have seen great effects produced by a union of perseverance and immovable good temper without the admixture of extraordinary talent. This acquisition is best acquired by practice and, as it is one which requires great tact, it cannot be entered upon too early. With us the happiness of every individual, from the highest to the lowest, depends in great measure on the good opinion of his fellows; and among young

persons temper is a requisite to popularity of the first order." The last but not the least important part of the training of a man of business was, in the judgment of the two brothers, "a practical acquaintance with the science of evidence . . . Examining facts, weighing arguments, and drawing inferences form high and elevating employments of the human mind . . . The first lessons in the science of evidence ought to be given by the parents . . . This department has been so admirably filled by the Edgeworths that any addition to their labours would be at once difficult and useless. We have found the handicraft works in which our pupils often engage themselves during the time which is at their own disposal furnish great opportunities for exercise in the art of making experiments." Training of the power of marshalling and judging evidence was one of the chief objects which Matthew and Rowland Hill had in view in giving mathematical and other lessons, but they attached the highest importance to what they called the jurisprudence of the school. They remark that it can scarcely have happened to any person of observation to witness the proceedings of a court of justice without finding himself better qualified for the task of investigation than before. In their school they arranged that many questions affecting school discipline should be referred to courts in which boys discharged the duties of magistrate, jury and other officers. "Great care is taken to make the whole business of the court so intelligible that none but the very young and inexperienced can find difficulty in following it from beginning to end. The number actively employed in the business of the courts generally amounts to a fifth or sixth of the whole community, and each boy is on an average called on to fill some department or other in the court once in five or six weeks. Thus in the course of time he runs the whole round of duties and gains a practical experience of all, filling each office with the more ability from his acquaintance with the others."

A favourite maxim with the two brothers was Gibbon's remark that "every person has two educations; one he receives from others and one, more important, which he gives to himself." They were careful not to lead a boy to imagine that his education would be finished when he had reached a certain age. They endeavoured to teach their pupils the arts of self-government and self-education. "So far from supposing education to cease at school or college, we look forward to the moment when our pupils become their own masters as that in which the most important branch commences. If they leave us with a discriminating judgment, the power of doing and forbearing whatever religion or reason shall tell them ought to be done or forborne, and such an extensive and familiar acquaintance with elementary learning as shall render the business of acquisition pleasant, we consider our duty performed. We have always endeavoured to recollect that the ability for self-direction often exists without the power of self-obedience. To us it is an object of deep anxiety to keep the habits in unison with the wishes. Few of the ills of life produce more pain than the state of discord which exists too constantly between men's opinions and their actions. We mainly attribute this defect to the want of early practice in the inestimable science of self-direction. Where much coercion is employed with young persons, they have no chance of acquiring this art. So far are their minds from governing their actions that the former are in a constant state of rebellion against the motives which influence the latter. To ensure the continuance of such conduct in the young man as the judicious

teacher would induce in the boy, it is necessary to bring motives to bear upon the latter which will not cease to act when he escapes from the trammels of a school. This great end can only be accomplished by forming an alliance with his mind. Let that be taken at an early age into partnership in the art and mystery of education. In proportion as we have found the means of always treating our pupils as reasonable beings, without endangering the subordination necessary in all government, we have increased our own pleasure in the exercise of our profession. Education is like the true art of blowing a fire. It is more important to leave a steady clear flame when you have done than to make a great blaze while you have the bellows in your hands. With this end in view, as little coercion as possible should be used in any stage of a pupil's education ; and even this little should be from time to time withdrawn as he becomes able to direct himself, so that when he leaves the school, he may have matured the habit of self-government."

As part of the preparation for the duties of later life, Matthew and Rowland Hill insisted on the importance of the habit of completing every undertaking. "A man who has lost the power of prosecuting a task the moment its novelty is gone, or is become encumbered with difficulty, has reduced his mind into a state of lamentable imbecility. The consciousness of not having persevered to the end of any single undertaking will hang over him like a spell and paralyse all his faculties. He will at last believe that, however fair may be his prospects and however feasible his plans, he is fated never to succeed. The habit of finishing ought to be formed in early youth. We take care to reward no boy for fragments, whatever may be their excellence. The consequence is that everyone learns to measure his powers. He undertakes nothing which he has not a rational hope of accomplishing ; and, having begun and knowing that he can receive neither fame nor profit by instalments, he is urged forcibly on to the end of his course."

Such were the aims which gave directness and decision to the educational work of the two brothers. They wrote, as they taught, with gusto. The knowledge of what had helped them to intellectual independence and had given strength to them in their hard struggle for self-culture coloured their educational purpose and gave it the power of conviction. Like Priestley, they had their minds chiefly fixed upon the needs of boys and young men before whom lay no vista of University training. Most of those for whose needs they catered would pass straight from school into the struggle of life. Matthew and Rowland Hill were free to plan their curriculum without regard to the demands of any external examination. They could build from their own design a bridge between home-training and business. They were old for their years. From the tone of the preface to the book which they published in 1822 the reader would not infer how young the authors were. "Numerous and excellent as are the writers on education, they have seldom been practical men, possessing the advantage of trying experiments in the science. They have consequently left us a field sufficiently large. We must honestly confess that we retain hardly a single opinion relating to any part of our profession which we held in early life. One by one we have surrendered them all to the force of experience."

There is nothing tame or derivative in the educational writings of Matthew and Rowland Hill. They speak with the authority of

experience. They had read widely. Their book shows that they were familiar with the works not only of the Edgeworths but also with Locke, with Sir Joshua Reynolds, with Adam Smith, with Rousseau, and (through Jullien's volume) with the method of Pestalozzi. But they had clear ideas of their own, and those ideas they had won for themselves by hard work of brain and will. They were men of their time ; borne forward by the movement of liberal thought ; sanguine in their belief in the virtues of self-government ; a little prone, as Robert Owen was prone, to over-elaborate the details of organisation ; and (unless the words are meant by them ironically) admirers of what they call "the noble art of money-getting," for which their system of earning and paying marks was partly intended to be a preparation. But they were original in their insistence upon the place of the individual in the school community and in their perception of the interaction between the independent mind and the collective judgment of the society surrounding it. The Hills were neither individualist nor socialist but a combination of both. They were convinced that "the great maxim of education ought to be : 'it is better to learn than to be taught.' " But they considered it "important that instruction should as much as possible be social."

III.

The personality of the Hills, the zest and *élan* of their work, and their reverence for probity of mind are the most impressive features of their educational experience. It is these which made the most permanent impression upon the character of their pupils. And it was these qualities that in later years brought each of the brothers to national eminence in public life. But in the pursuit of their purpose at Hill Top and Hazelwood Schools they formulated, and perhaps were the first to formulate, some fruitful principles of educational philosophy. Of these the following were distinctive.

- (i) They laid emphasis on the fact that a school is a community with the psychological characteristics of a community, as well as a body of pupils each of whom has a claim to individual care and to freedom for individual development.
- (ii) They brought masters and boys into intimate and friendly co-operation in the corporate life of the school. Under their system the aloofness of the masters, which Dr. Mozley noted as one of the characteristics of the schools of the eighteenth century, was discouraged.
- (iii) They admitted the boys to a share in the direction of school-life and gave them serious responsibility in making decisions on points of order and discipline. "The principle of our government is to leave, as far as possible, all power in the hands of the boys themselves. To this end we permit them to elect a committee which enacts the laws of the school, subject to the veto of the Head Master. The government of the school is vested in the hands of the Principal, the resident teachers and a committee of boys elected by their companions." Professor R. L. Archer aptly compares this arrangement with that of the George Junior Republic.

- (iv) They broke away from the conventional methods of punishment and discipline. "We do not place much dependence on rewards and punishment, particularly the latter, and have been enabled gradually to substitute for rewards and punishments, motives of a higher rank Few of our pupils are liable to any restrictions deserving the name of punishment."
- (v) They grouped their pupils separately for each branch of school work, and gave independent promotion in each subject.
- (vi) They made rank in the school an object of great importance to the boys, giving to every boy an opportunity of winning consideration by excellence and industry in that branch of work (including manual work like printing) for which he showed aptitude.
- (vii) They realised the educational value of music, and also of rhythmical movement (as for example in the cure of stammering).
- (viii) They made dramatic performances a frequent part of school-work, the boys helping in scene-painting and other necessary preparations.
- (ix) They encouraged voluntary and independent work in leisure hours, *e.g.*, modelling, etching, machine construction, music, private reading and literary composition. The school had a good library. By successfully completed voluntary labour a boy gained marks which improved his position in the school.

Matthew and Rowland Hill were justified in thinking that they had advanced along the road of experience to a point of view which had not yet been reached by the rank and file of their fellow-practitioners in the art of teaching. Their judgment of a boy's mind and motives was more realistic, less hampered by preconceptions, than was the judgment of the more conventionally-minded among their contemporaries. They were prepared to trust boys more. They could not accept the current assumption that in some undefined way the mind of a boy was different in its reactions from the mind of a man. They disliked the division of a school into the boy-world and the masters' world, with the antagonisms and secessions which such a division breeds. "A school," they wrote, "is but a nation in miniature." Just as in national life they opposed class privileges and favoured democratic self-government, so in the sphere of education they laboured for human liberty and, while insisting on certain fundamental duties of obedience and subordination, brought the whole school-community into partnership in matters of common concern. The details of their plan were over-elaborated, its nomenclature a little absurd. But in actual working the machine moved smoothly and with precision. The boys were happy. In the *Edinburgh Review* for January, 1825, the writer of an article on Hazelwood School quotes at length from the letter of a friend who had recently made a visit of inspection. This observer reports that "the most striking things in the school are its cheerfulness and the kindly terms of the boys with the masters The boys are not turned into little men."

But there are signs that the school was coldly regarded by many people in the neighbourhood. Its radical tendencies were suspect. The Hills were strong and outspoken Liberals, and their liberal views were reflected in the organisation which was characteristic of their school. Just as Mrs. Sherwood felt some repugnance at the tendency of the educational work of the Edgeworths, so did many who heard of what the Hills were doing feel distrust of the presuppositions which underlay their plan of school government. An old pupil, Mr. W. L. Sargent, writing many years afterwards about the school, recalled this feeling of dislike. "Hazelwood was so different from other schools that there would inevitably be great varieties of opinion as to its merits. The men educated there have not generally done it justice, and I confess that I formerly shared in their depreciation of it."

At a time when theological differences divided English social life, the attitude of the Hills towards religious teaching estranged many who would otherwise have taken a keen interest in their educational experiment. Matthew and Rowland Hill's views on the place of teaching of religion in their school seemed to many of their contemporaries pale and dangerously undogmatic. In a footnote (on page 77 of the first edition of their book) they give a short statement of their practice in this matter. "On the momentous subject of religion we feel we ought to say something ; and yet, in common we suppose with all conscientious teachers whose pupils belong to different religious communities, we have had great difficulty in ascertaining our duty on this head. It is almost impossible to enter into any minute course of religious instruction without entrenching upon disputed ground ; and yet we feel that no parents, except such as coincide with our own views, can intend us to influence the religious opinions of their children ; and we should therefore conceive such influence to be a gross breach of trust. At the same time, whatever religious exercises can be joined in by all are not omitted. Whatever formularies too are in unison with the respective religious opinions of the parents are taught, and provision is made for attendance on such public worship as is best calculated to prevent any dissimilarity of religious views between the parent and his child."

On another aspect of the life at Hazelwood School, Mr. W. L. Sargent expressed an unfavourable opinion. From memory of his school-days he wrote : "By juries and committees, by marks and by appeals to a sense of honour, discipline was maintained. But this was done, I think, at too great a sacrifice. The thoughtlessness, the spring, the elation of childhood were taken from us ; we were premature men The school was, in truth, a moral hot-bed, which forced us into a precocious imitation of maturity I know too well that some of us had a great deal of the prig about us. I have comforted myself by observing that in later life my schoolfellows (perhaps therefore myself) outgrew this unamiable character. The Hazelwood constitution, discipline, instruction, were in a perpetual flux ; the right of to-day was wrong to-morrow ; we learnt to criticise and doubt every thing established ; 'whatever is, is wrong' might have been our motto. We had a conceit that we could amend everything, from education to driving a horse. This constituted our priggism."

No feature in the Hills' plan is more open to criticism on this ground than the leaving certificate. "We have laboured," they write, "to induce

in the minds of our pupils a constant motive for mutual examination and a constant feeling of mutual responsibility. Our last means is a Court of Character. Whenever a boy above the age of thirteen leaves the school, a sub-committee is appointed to draw up a report of his conduct and acquisitions. This ordeal, growing into importance in the eyes of the pupil as the period for undergoing it approaches, must furnish a powerful motive to excellence in those whose example is most likely to be followed ; and it also fills the place of the artificial incitements offered by the master, which, however strong in early life, gradually lose their force as the time draws near when the pupil will no longer be subject to their influence. By thus directing the minds of our pupils towards the real merits of each other we have, we hope, secured the alliance of that powerful feeling, love of sympathy, which according to Dr. Adam Smith, is the foundation of moral sentiment."

IV.

The greatest English schoolmaster of the nineteenth century was Thomas Arnold, of Rugby. Was Arnold indebted to Matthew and Rowland Hill ? Of these two famous Warwickshire schools, did Rugby derive any benefit from the stimulating experiments at Hazelwood in Birmingham ?

In the Dictionary of National Biography (s. v., Rowland Hill) Dr. George Birkbeck Hill, his nephew, wrote, " It can scarcely be doubted that the Hazelwood system had an influence on Dr. Arnold's mind." Possibly, even probably so, but I know of no direct evidence. Perhaps it may still be forthcoming. There is, however, no mention of the Hills in Dean Stanley's " Life of Dr. Arnold." In Stanley's Preface to the " Life " (1844) he makes the tantalising remark, " I had at one time thought of indicating the various distinct authorities from which the chapter on his *School Life at Rugby* has been completed, but I fear this would be impracticable." In that chapter Stanley uses an expression which may perhaps reflect a recollection of the title of the Hills' book, " Plans for the Government and Instruction of boys in large numbers." Stanley wrote of Arnold, " Amid all the plans that came before him, he felt that there was a principle which lay far more deeply seated than any mere question of school government."

In Arnold's view, evangelical religion should colour the educational life of a great school. The Hills belonged to the Priestley and Edge-worth tradition. They were convinced of the importance of religious influence in education but were not evangelical in the expression of their religious belief. I think that Arnold would have regarded their educational plans as lacking in religious intensity. But it is improbable that he had never heard of the Hills' book or of the Hills' school, and many of their ideas are consonant with his.

In any case English education is indebted both to the Hills and to Dr. Arnold for insisting upon the ideas that a school is a community and that the best way of training young people to bear responsibility in later life is to give them responsibility at school. They found that their confidence was justified. But upon some of the pupils they threw a burden too heavy for tender years.



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4. Life of Sir Rowland Hill, K.C.B., D.C.L., F.R.S., and the History of Penny Postage by Sir Rowland Hill and his nephew, George Birkbeck Hill, D.C.L. (London, Thos. de la Rue and Co., 110, Bunhill Row, 1880. 2 vols. Large 8vo.

The Correlations between School Subjects.*

By H. G. STEAD.

(1) *Introductory*.—In recent years one of the most interesting applications of the statistical method in the study of education has been that relating to the correlation of school subjects. This refers, of course, not to the attempt to make the teaching of one subject fit in with the teaching of another, but to the estimate as to the extent to which ability to learn one subject is found in conjunction with ability to progress in another subject, or indeed the extent to which the same ability is used. Looked at from another point of view it is the attempt to discover and to state in an exact form the extent to which the order of merit in one subject, say arithmetic, is similar to the order of merit in another subject, say algebra. The most convenient means of indicating this is by the "coefficient of correlation," (r) a figure which varies between 1 and -1. Complete resemblance between two orders is indicated by 1, while 0 represents no further resemblance than is found on a mere basis of chance.†

The results given in this paper are based upon an investigation into the marks awarded at the terminal examinations held in two schools; these schools will be distinguished as A and B. "A" is a small country grammar school (partly supported by the Local Education Authority) and has an average attendance of seventy-five. The staff consists of the headmaster, three full-time graduate assistant masters, and visiting masters for manual work and drawing. In addition to their academic qualifications the members of the staff possess teaching qualifications, and changes are rare.

The classes are small. On the one hand this reduces the number of pupils from whose marks and positions the correlations can be calculated; on the other hand it ensures that each member of the group has received practically individual attention, and for this reason the results are probably quite reliable. Theoretically, the probable error is large when a small number of cases are employed, but it should be remembered that this is no reason for assuming that large numbers make the deductions based upon them more accurate. If the few cases are more reliable ones, the probable error, although theoretically large, may be actually quite small. This distinction between the theoretical probable error, and the actual error, should be kept clear. Confusion between them leads to the view that it is only necessary to measure many cases in order to obtain trustworthy results—a view which in experimental work results in lack of attention to the technique of the experiment.

The examination papers on which the marks were awarded are always carefully framed, and are typed, in order that each pupil may have a copy from which to work, thus obviating loss of marks due to misinterpretation of questions written on a board. The examinations are held long enough before the end of a term to ensure careful marking.

* Being a subsidiary part of a thesis presented for the degree of M.Sc. in Education at the University of Birmingham.

† Further explanations of this will be found in R. Rusk, "Experimental Education," chapter i. C. W. Valentine, "Experimental Psychology and Education," chapter viii. Fuller explanations are given in C. S. Myers' "Experimental Psychology," chapter x.

The forms in this school are I (preparatory), II, III, IV, and V. The correlations given in the present paper are from the marks awarded to the pupils in Forms II and III.

"B" is a modern secondary school in a large industrial city in the Midlands. The average attendance is about 300. The forms in this school are : II, IIIA, IIIB, IIIC, IVA, IVB, IVC, VA, VB, VIA, VIB. The numbers in each class are much larger than in the case of "A," and the correlations obtained from IIIA, IIIB, IIIC, IVA, IVB, IVC, are included in this paper, for the purpose of comparison with those obtained from "A."

(2) *Historical*.—Table 1 summarises the results of some previous investigations upon the same subject.

The figures marked (a) refer to an investigation by Clark Wissler (a), and are based upon the marks gained by 200 students (undergraduates) of Columbia University, in the various subjects of the curriculum. Those marked (b) are due to Brinkerhoff, Morris and Thorndike (b), and are calculated from the marks obtained from pupils all taught in the same high school. S. C. Parker (c) based his figures on the marks of 245 first year high school students, "all from the same year's class of the same school." Smith (d) "using teachers' marks for grammar school subjects as taught in New York City schools," found the correlations denoted (d). His figures are based on a total of 1,525 pupils. Burris' (e) correlations are based on an investigation covering nearly 1,000 individuals from nineteen representative high schools, while Spearman's (f) are determined from twenty-three pupils from a "high-class preparatory school," the ages of the pupils ranging from nine years five months to thirteen years seven months.

Reference Notes for Table I on next page.

(a) Clark Wissler, "The Correlation of Physical and Mental Tests," *Psychological Review Monograph Supplement*, Vol. III, No. 16, June, 1901.

(b) Brinkerhoff, Morris, and Thorndike, "Columbia Contributions to Education," Vol. XI, No. 2.

(c) Quoted by Thorndike in "Educational Psychology," p. 36 (1903 edition)

(d) A. G. Smith, "Columbia Contributions to Education," Vol. XI.

(e) W. B. Burris, "Columbia Contributions to Education," Vol. XI.

(f) C. Spearman, "General Intelligence, Objectively Determined and Measured," *American Journal of Psychology*, 1904, Vol. XV.

TABLE L.

	Latin.	Maths.	Hist.	Science	Alg.	Geom.	Classics	French	Eng.	Geog.	Drawg.
Latin	—	—	—	—	—	—	—
Mathematics	•58 ^a •31 ^b •40 ^e	— —	—	—	—	—	—
History	•44 ^b •43 ^c •43 ^e	•26 ^b •33 ^e	—	—	—	—	—
Science	•35 ^b •54 ^c •44 ^e	•07 ^b •41 ^e	•61 ^b •56 ^c •40 ^e	—	—	—	—
Algebra	•54 ^c	—	•38 ^c	•40 ^c	—	—	—
Geometry	—	•48 ^b	•42 ^b •49 ^c	•57 ^b •62 ^c	•52 ^c •45 ^f	—	—
Classics	—	•70 ^f	—	—	—	—	—
French	•60 ^a	•67 ^f	•58 ^c	•48 ^c	•68 ^c	•83 ^f	—
English	•50 ^b •62 ^c •48 ^e	•09 ^b •39 ^d •39 ^e •64 ^f	•41 ^b •62 ^c •40 ^e	•26 ^b •58 ^c •41 ^e	•30 ^b	•78 ^f	•47 ^c •67 ^f
Geography	—	—	•36 ^d	—	—	—	•43 ^d
Drawing	•40 ^b •10 ^c	•02 ^b •14 ^d	•10 ^b •10 ^c	•30 ^b •33 ^c	•20 ^c	•06 ^c	—
German	—	—	—	—	—	—	—
Greek	—	—	—	—	—	—	—

Other investigations bearing upon the same topic, but not included in Table 1, are those of Elderton (*g*), who concludes that the correlations of drawing with all other subjects are "extraordinarily low," and W. Brown (*h*), who, in an investigation into the correlations exhibited by various branches of mathematics, found that "after correction for the effects of irrelevant conditions, algebra and geometry show hardly any correlation at all—in fact, the partial coefficient for 'arithmetical ability constant,' is zero." Cyril Burt's (*i*) research into this question was based upon a series of special tests given to 120 elementary school children, of age ten to twelve years, from two schools. He concludes "that performances in all the subjects tested appear to be determined in varying degrees by a single common factor," and after further mathematical treatment of the correlations obtained, holds that "the subjects which are positively correlated fall into three, or four, fairly distinct groups. These are:—

- (1) *Arithmetical Group.*
- (2) *Manual Group*—including handwork, writing (speed), and drawing.
- (3) *Linguistic Group*—dictation and reading.
- (4) *Composition Group*—history, geography, science and composition.

In view of the results given below, it is interesting to note that when the correlations given by Burt are arranged in the form of a hierarchy composition, science and arithmetic appear at the top, while drawing and writing (quality) are at the bottom. It will be seen that Table 1 shows a tendency in the same direction.

(3) *The present investigation.*—Four series of results are included.

(a) The first of these is based upon the marks gained at the Mid-summer examinations of 1916, 1917, 1918, 1919, and 1920, by the pupils in Form III at school "A." In this series arithmetic, algebra, and geometry are included under mathematics, while English comprises history, geography, composition, literature, and Scripture. The correlations between the various subjects were calculated by means of the "rank" formula,

$$\rho = 1 - \frac{6 \sum d^2}{N(N^2 - 1)}$$

the values thus obtained being converted into "r" values, by the use of Pearson's formula—

$$r = 2 \sin \left(\frac{\pi}{6} - \rho \right)$$

The full tables would occupy too much space if they were given here in full. The following summaries indicate the chief features of interest in the results obtained. The Table on next page gives the position of the subjects marked in the hierarchy of correlations as arranged in order of descending magnitude.

(*g*) Elderton, "On the Association of Drawing with other Capacities in School Children," *Biometrika*, Vol. VII, pp. 222–226.

(*h*) W. Brown, "An Objective Study of Mathematical Intelligence," *Biometrika*, Vol. VII, Pt. III.

(*i*) C. Burt, "The Distribution and Relations of Educational Abilities."

POSITIONS OF THE SUBJECTS IN THE HIERARCHY OF
CORRELATIONS.

	Average Order.	1916	1917	1918	1919	1920
Grammar	1	1	4	2	1	3
Science	2	2	2	4	2	2
English	3	4	1	1	4	4
Mathematics	4	3	5	3	3	1
French	5	5	3	6	5	5
Latin	6	6	6	5	6	6
Drawing	7	7	7	7	8	7
Woodwork	8	8	8	8	7	8

The consistency of the tables is noteworthy, and may be further exhibited by taking the correlations of grammar with all the other subjects.

CORRELATION OF GRAMMAR*

Year.	Science.	Math.	English.	French.	Latin.	Drawg.	W'work.
1916	.83	.87	.92	.59	.70	.25	.21
1917	.53	.52	.78	.77	.69	.21	.05
1918	.78	.78	.88	.69	.33	.45	.43
1919	.60	.66	.74	.64	.66	.27	-.33
1920	.76	.69	.55	.63	.69	.48	-.6

The number of pupils each year, and the average age of the form, are given below:—

Year.	No. of Pupils.			Average Age.	
1916	14	....	14 years 10 months.
1917	16	....	14 „ 10 „
1918	17	....	14 „ 10 „
1919	18	....	14 „ 11 „
1920	29	....	14 „ 10 „

It will be observed the drawing and woodwork always occupy the last two places, and that the correlations of woodwork with other subjects are all so low as not to be "significant." There is little doubt that these subjects involve abilities which are, in the main, of a different nature from those involved in the successful performance of the other subjects, quoted above. It will also be observed that science, English (with grammar), and mathematics tend to head the table, which again confirms the results already cited.

(b) The second series of results was calculated from the marks obtained by the pupils in Form III at School "A" at the December examinations of 1920 and 1921. In this series history and geography were separated from English, and mathematics was divided into algebra, geometry and arithmetic.

* With classes of about 20, the probable error of coefficients greater than .50 is less than .16; for coefficients greater than .30 and less than .50 it varies between .20 and .16.

(c) The third series of results deals with the positions gained in the December examinations of 1918, 1919, and 1920, by pupils in Form II at School "A."

Table II gives the positions of the subjects in these two series of results when the correlations between the subjects were arranged in hierarchical order of descending order of magnitude.

TABLE II.

Year	Average Order.	FORM II.			FORM III.	
		1918	1919	1920	1920	1921
No. of Pupils	—	27	25	23	29	16
Average age	—	13 yrs. 6 mths.	13 yrs. 2 mths.	13 yrs. 3 mths.	14 yrs. 10 mths.	14 yrs. 3 mths.
Science	1	2	2	3	1	1
Algebra	2	1	1	1	5	7
Geography	3·5	4	4	9	4	3
Grammar	3·5	6	6	4	6	2
Arithmetic	5	3	3	2	8	10
Geometry	6	7	7	6	2	6
French	7	5	5	8	7	5
English	8	8	8	5	3	8
Latin	9	—	—	—	10	4
History	10	9	9	7	9	9
Drawing	11	10	10	10	11	11
Woodwork	12	—	—	—	12	12

Woodwork again occupies the lowest position in Form III, and drawing in Form II (woodwork is not taken in this Form).

(d) The fourth series of results is based upon the marks gained in 1920 in School "B." Although considerable variation was found between the correlations exhibited by the same subjects in different Forms, it is the agreement between the order of the subject which is the striking feature. The variation is due in part to the undoubtedly varying influences of the teachers, and possibly in part to the fact that some factors do not come into play until the later years of school life, while others which are employed in the early stages may be eliminated. This point is reserved for further investigation. The positions of the various subjects are given on page 31.

POSITION OF SUBJECTS IN THE HIERARCHY OF CORRELATIONS.
 (School "B," December, 1920).

	FORM.					
	IVa.	IVb.	IVc.	IIIa.	IIIb.	IIIc.
Physics	1	3	1	2	2	1
Mathematics	2	2	2	3	1	2
History	3	5	3	4	8	7
Chemistry	4	6	7	6	4	3
French	5	7	5	5	6	4
English	6	1	6	1	3	6
Geography	7	4	4	7	5	5
Geometrical Drawing	8	8	8	8	7	8

In every table (except one) drawing occupies the lowest place. The positions of the other subjects are fairly regular, except history and English. "Science" in School "A" approximates very closely to "physics" in School "B," and when this is borne in mind, it will be seen that the results from the two schools (which differ widely in environment) tend to confirm one another.

In order to investigate whether these results in any way confirmed those of Burt, one of the tables (that for Form III—School "A"—December, 1920—see p. 32) was selected for further treatment. The value of the correlation of each subject with a "Hypothetical General Factor" * was first calculated, and the values of the "theoretical" correlations between the various subjects were obtained. These correlations are the values obtained upon the assumption that they are due to one common factor only, this factor being shared by each subject in different degrees. From two such sets of results—the observed and the theoretical—it is possible † to obtain the "specific" or "partial" correlations between the various subjects, *i.e.*, the correlations due to factors other than the "general factor." The results obtained confirm Burt's conclusions in a remarkable manner. There was decided evidence of the existence of "specific," or "group"-factors, which may be tentatively represented as in Fig. 1.

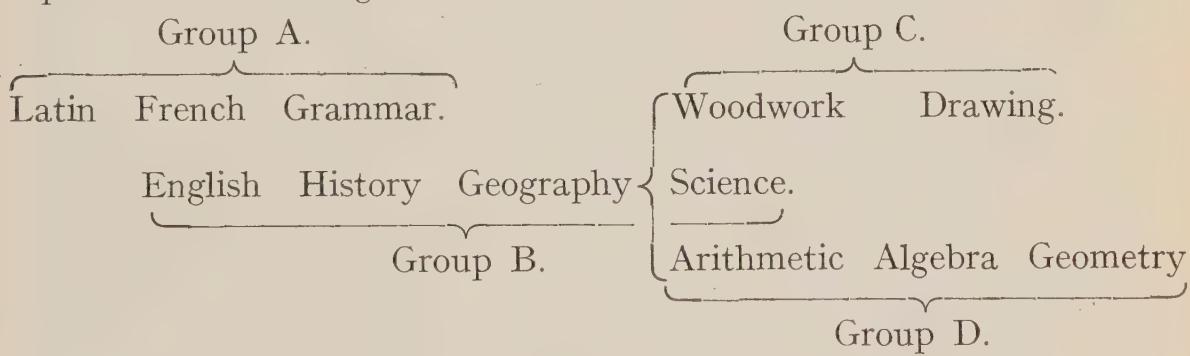


FIG. 1.

The diagram indicates that the group factors overlap as bracketed. It is not intended to convey the idea that Group C and Group D overlap entirely, but that woodwork has a common factor with science and also with the mathematical group. It is suggested that Group A is the "linguistic group," Group B the "composition" group, Group C the "manual" group, and Group D the "mathematical" group. It would

* See Burt, op. cit. p. 52.

† See Burt, op. cit., pp. 53-58.

appear that science, in its later school stages at all events, requires factors common to the composition, mathematical, and manual groups, and it would also seem that the groupings of subjects adopted by the Oxford and Cambridge Boards for the purpose of their Higher Certificate examinations is based upon sound reasons.

It should be borne in mind, however, that the various subjects included in a group may not exhibit correlation when further analysed. For instance, Brown's research, quoted above, indicates that the correlation of geometry with algebra is due to factors which both have in common with arithmetic.

In order to test this conclusion a specially devised and graded test in these three subjects was given to thirty-nine boys in School "A," and the marks gained were used to calculate the correlations between the subjects by means of Bravais-Pearson Product-Moment formula. The results obtained were :—

$$\begin{aligned}(1) \quad r(\text{Arith. Alg.}) &= .72 + .051 \\(2) \quad r(\text{Arith. Geom.}) &= .67 + .059 \\(3) \quad r(\text{Alg. Geom.}) &= .61 + .068\end{aligned}$$

Here one would be tempted to postulate correlation of a high order between algebra and geometry. When, however, the partial coefficients are calculated the following coefficients are obtained :—

$$\begin{aligned}(1) \quad r(\text{Arith. Alg.} - \text{Geom. constant}) &= .53 \\(2) \quad r(\text{Arith. Geom.} - \text{Alg. constant}) &= .41 \\(3) \quad r(\text{Alg. Geom.} - \text{Arith. constant}) &= -.25\end{aligned}$$

These results confirm Brown's figures and show clearly that the correlation indicated between algebra and geometry is entirely due to factors which are common to these abilities and ability in arithmetic.

(4) *Summary.*—(1) It appears that performances in the subjects of a secondary school curriculum depend, in the main, upon a factor, or factors, which whether single or manifold, single or complex, is or are general.

(2) In addition to this general factor, or factors, there would appear to be overlapping specific factors common to various groups of subjects. It would seem that groups are (*a*) linguistic, (*b*) literary, (*c*) mathematical, (*d*) manual. Science shows some connection with each group, even the first.

(3) Subjects included in a group may owe their correlations to the fact that they possess minor factors in common with another member of the group and may exhibit no correlations when the effect of these factors is eliminated. Algebra, geometry and arithmetic illustrate this. These subjects exhibit high correlations with each other, but when the effect of arithmetical ability factors is eliminated, geometry and algebra are not correlated.

Acknowledgments.—My thanks are due to Professor C. W. Valentine, who suggested this investigation to me, and who was responsible for much material being placed at my disposal, and also to the Rev. T. Somerset Bateman, B.A., and Mr. L. M. Jones, B.Sc., A.R.C.Sc., for willingly allowing me to make use of the material.

Education and Spiritual Realities.

A Paper read at the T.C.A. Conference on Religious Education at Swanwick in November, 1922.

By H. BOMPAS SMITH.

IN spite of the work of the wisest and best among us, all is not right with the religious training that our Colleges give their students. The feeling that we ourselves are not doing all we ought has led many of us to this place. It therefore seems fitting to begin taking counsel together by trying to see a little more clearly the end at which we ought to aim. That end has been described in many different ways, but, in accordance with the title given me, I shall speak of it as that of helping our students to live in the light and strength of spiritual realities. By spiritual realities I mean such unseen forces as love and loyalty and truth, and also such qualities as those of beauty or grandeur which are for us the revelation of some aspect of a spiritual world. These realities may be looked at from two different though connected points of view. We may, in the first place, think of them as actually existing, or capable of existing, in our own human lives or in the world about us. We may think, for instance, of the love felt by conscious beings for each other, or of the high purposes which inspire men at their best, or of men's visions of what ought to be. From this point of view spiritual realities are the laws or standards of true human life. They have actual existence only in men's thoughts and deeds. But, on the other hand, spiritual realities must be more than this. We feel that they cannot depend on our weak efforts. In a sense they are more real than we, the corner-stones of the scheme of things. Probably those who are here will agree that spiritual realities are so real and vital because they are the expression or working on our human level of the one supreme reality, God himself. Thus love is no mere human emotion. It is God living in us as we are able to bear his life. Ultimately there is only one spiritual reality, whose life and nature are known to us in part in many different forms. Truth and goodness and beauty, for example, are absolutely real because they are the living expressions to our understanding of Him whose thoughts are not as our thoughts and who is yet the light of all our seeing.

Our minds are opened to these spiritual realities mainly through the experiences of the life we share with others. They come to us in the "little unremembered acts of kindness and of love" no less than in the high thoughts and heroic deeds which show us the true meaning of the daily round. We see them reflected in our neighbours' faces. We hear them in their voices. We learn of them in books. We feel their presence in the wonders and beauties of the natural world. We thus in some measure come to live in them ourselves, perhaps hardly knowing what we do. And whenever and however we are consciously confronted by them, we feel that they have an importance and a claim incomparably greater than those of outward things. They come to us, as for instance in the demands of duty, as given once for all, and as asking beyond question loyalty to the uttermost. In their presence we can only say like Luther "Here I stand. I can no other. God help me. Amen." Borrowing with a difference the words of Dr. Bernard Bosanquet we may say, "Wherever a man is so carried beyond himself, whether for any other being or for a cause or for a nation, that his personal fate

seems to him as nothing in comparison with the happiness or triumph of the other, there you have the universal basis and structure of "spiritual reality."¹

If such is the general nature of spiritual realities and of our relation towards them, it follows that the Training Colleges must help their students to gain a certain attitude of mind or live in a certain spirit. The spirit, namely, of men and women who are alive to the greatness and absorbing interest of moral endeavour and of religious faith. Such a spirit is the antithesis of conventional religiosity or smug moralism. It is a spirit of freedom and adventure, of humility and fellowship. Unless our students live in some degree in this spirit in the class-room and on the playing-field, the religious training we have given will be of small avail.

When we ask ourselves how we can best help our students thus to live, we shall, I think, find it useful to distinguish two forms in which spiritual realities are known to us, to distinguish, that is, the attitudes characteristic respectively of morality and religion. This distinction is not always drawn. Some writers hold that moral perfection is the supreme reality, and therefore that the effort after moral perfection is man's highest response to the spiritual nature of the universe. What gives its deepest significance to human life is, they hold, its power to overcome or to transmute that which is evil or imperfect, and to realise in ever greater measure the ethical ideal of perfection. Religion then becomes either one form of moral effort, or an adjunct of morality, or even an unnecessary complication. I cannot attempt to discuss the reasons for regarding this view as less satisfactory than the one I here suggest. The philosophical implications of the two views are set forth by Dr. Bernard Bosanquet in his recent book, "The Meeting of Extremes in Contemporary Philosophy," and I must be content to refer to his masterly treatment of the question. We may, I venture to think, accept his general conclusions even if we do not altogether share his philosophical position. For our present purpose I shall simply try to illustrate the difference, as I conceive it, between the moral and the religious attitudes, without raising the more fundamental issues.

We may begin with a parallel distinction on a much lower plane. If my tooth aches and I am going to the dentist to have it taken out, I may be in either of two states of mind. I may think of the coming operation and the pain which I shall suffer, telling myself that I must be brave however bad the pain may be. Or I may be so absorbed by the thought of the relief I shall experience when the tooth is out as to forget the momentary pain which I must suffer first. Both these attitudes may help me to bear the shock, but the point is that they are different. Or to take another illustration, we will suppose that I am prone to say biting and unjust things to anyone who annoys me. I may fight against this bad habit and perhaps cure myself by so doing. But if there is some person to whom I am much attached, I may in my intercourse with him be so occupied with my desire to make him happy that the sharpness of my tongue never gets a chance. Or, again, we enjoy listening to music most, not when we are trying to understand it, but when we become absorbed in the music as such. Similarly, when we are confronted by

¹ Bosanquet's word is "religion." See his "What Religion Is." (p. 4.)

some spiritual reality, when, for instance, we feel that we must achieve some end at any cost, two different attitudes of mind are possible and right. We may struggle against the obstacles which hinder us either in ourselves or in the world about us. We may strive by thought and effort to change what is into what we feel ought to be. In that case we assume what I call a moral attitude towards the supremely valuable end. Very often it is essential that we should take this attitude, and moral effort is one of the chief ways in which we respond to the claims of such spiritual realities as truth and goodness. But this attitude, though essential, does not represent our complete response to spiritual realities, nor does it give us full and lasting satisfaction. We may rightly be satisfied because we have done our duty, but there is always something more we might have done. We feel we are unprofitable servants. If, however we fix our minds, not on our own responsibilities and difficulties and efforts, but on the realities themselves, we can by faith and will become so absorbed in their supreme value and perfection that all the complications which beset us are forgotten or reckoned of small account. We then feel that it is the realities which matter, and we and our efforts matter only as their organs or their vehicles. We feel, for instance, that truth and goodness are absolutely real, and in so far as this conviction dominates our minds we pass from the level of morality to that of religious faith. We rise into a world beyond the changes and chances of this mortal life, a world in which struggle and conflict are left behind, or become one with absolute perfection, and other things in comparison become the handmaids of joy and peace. In spite of sin and weakness we become united to a supreme reality in comparison with which we are of no account. The religious life is thus different from the moral life. It has an inner side of which I cannot speak, and its fruit is a different temper, more heroic and more humble. It is the Alpine Uplands, Baron von Hügel tells us, the edelweiss and the alpenrose, in place of the Lombard Plains with their corn and their potatoes. "Acts and dispositions," he says, "become possible, attractive, even actual within us, which no State, no Guild, can ever presuppose or require. Decency is carried up into devotedness, and homeliness into heroism. . . Simple justice and average fairness are transfigured into genial generosity and overflowing self-devotion."

Men have lived at this level with no clear thought about spiritual realities or conscious faith in God. But, speaking generally, a religious life involves a rational faith in God and some conception of His nature. Most of us have some form of theology as part of our religion, and in some cases our religious faith and temper are sustained by a definite system of doctrines which explain and deepen our experience. Further, our religious life is in most cases expressed and strengthened by special actions or observances. We practice some form of religious worship, however informal it may be. Of all these characteristics of moral and religious experience we must take account, if we are to help our students according to their needs. In many respects our task is the same as that of teachers in schools for boys and girls. For the schools must aim at helping their boys and girls to fight the good fight and live according to the best they know. By the manifold influences of their common life the schools must teach a steadfast faith in the reality and power of truth and right. And, not content with this, the schools must also help their boys and girls to be religious in a broad and healthy sense. A

school is the natural home of generosity and loyalty and heroism in little things, and thus in some measure of the religious temper. But that temper is apt to lose its religious flavour unless it is deepened and made rational by the thoughts and feelings fostered by common worship and religious teaching. Our best schools show us how boys and girls can be helped to live on Baron von Hügel's Alpine Uplands, and how religious training in the technical sense may lead them to realise the meaning and sources of such a life.

If our Training Colleges are to send out teachers who will carry forward work like this, their students must live the same kind of life as they will afterwards foster in those they teach. But the training given by the colleges must be more advanced than that possible in the schools. Our students have come to a time of life when independent thought and will are more developed than they are in boys and girls. Further, our students are called not only to live aright and to be in the true sense religious, but also to prepare themselves for helping others to do the same. For both reasons they must know as well as live, and the colleges' influence and teaching must be informed and purified by thought. We must appeal to our students' reason, and be more careful to provide opportunities for them to help themselves than to give them authoritative guidance. But we cannot divest ourselves of responsibility for their equipment, and of that equipment a reasoned ethical and religious outlook on the world will be an important part. By one road or another our students ought to arrive at what we may call a philosophy of life. Some of them will gain such a philosophy with little or no assistance from ourselves. Others are troubled by uncertainties and difficulties, and others, again, have never really faced such questions as that of the moral basis of human life and progress. Thus for example in teaching history they will attribute narrowly selfish motives to the actors, and assume that self-interest is the natural guide of life. Students such as these need help in different ways, but we do not play our part unless they enter on their calling with the assured conviction that truth and justice and devotion to the common good are the foundations and the inspiration of all true human progress.

We shall not, however, be content with enabling our students to gain simply an ethical outlook on the world. We shall strive to lead them to realise by thought as well as by feeling and by will, the meaning and value of religion. I do not mean merely that they should recognise religion as one of the most important of human interests. That they should get so far is much, but it is not what matters most. What matters is that they should think of religion as our response to the most real of all realities, so that religious knowledge becomes for them a knowledge of God's work in us and in the world. We may call it theology or philosophy, but its subject-matter and to some extent its methods are different from those of psychology or history. It is the fruit not of thought only, but also of spiritual insight and experience. It is faith as well as knowledge, or rather that highest kind of knowledge which is faith. Of course such knowledge will always be imperfect, but if it satisfies our deepest needs it is for us a symbol of that which is beyond all human understanding. How we can best help our students to gain this religious knowledge I cannot here discuss. Some of them, perhaps, know more than we. Others have never thought about religion, and have little religious experience of their own. Others, again, are inclined to doubt the value of all religion,

because they are dissatisfied with the particular form of it taught them in their earlier days. Many of them, however, are anxious to be helped to think, and are grateful for any teaching we can give, provided the keynotes of that teaching are candour and humbleness of mind. If only we could teach religion as we ought, no subject is so full of interest and adventurous possibilities.

Such in bare outline is, I believe, the task that is laid upon us, and however faulty my description of it the greatness of the task itself is beyond question. "The main problem of the immediate future," says Prof. Muirhead, "is to reinspire our educational system with the religious idea, the idea that the task to which the teacher is called is nothing less than the opening of the soul to all the influences, spiritual, social, æsthetic, cosmic, that call to it from the unseen, and thus to fit it for its true life . . . If it is asked whence this inspiration is to come, who are to be the bearers and communicators of it, the answer must be, I believe, the universities and training colleges." And he adds, "There is no more pressing question . . . than that of the likelihood of their rising to this idea of their function."

Some Undesigned Effects of Educational Administration.

By R. CARY GILSON.

THE cost of English Secondary Education, defrayed until 1902 entirely out of fees and endowments, has since that date been largely transferred to public funds. The transference is still in progress. Some schools still remain independent of both National and County or Municipal support. A much larger number have been for some time in receipt of Government aid in the form of a substantive grant. More still are now financially assisted both by the Government and the Local Education Authority. These are technically called "Aided" Schools. And of course a host of new schools have arisen which are known as "Maintained" Secondary Schools and have been provided *ab initio* by the Local Education Authority or in some cases taken over by it from a formerly existing Governing Body of Trustees.

The position is one of transition, and few persons actually engaged in Secondary Education can have failed to feel strong misgivings concerning the tendency of events. What strikes one most in the experience of the change is that there are two points of view which we may call the administrative and the educational, and that views from these points are different and are coming into conflict. As usually happens in such cases it is not the intentions of the legislator or the administrator that are at fault, but legislative and administrative action is found to produce numerous results which were never intended at all. This is my reason for choosing the above title for the present paper, in which I have endeavoured to set down a few typical examples of such unintended effects. They are of unequal importance in themselves, but all illustrate a danger which I regard as extremely pressing and of which I take a most serious view. It would be deplorable indeed if well-meant efforts to bestow Secondary Education upon the humblest of His Majesty's subjects should end through lack of foresight and clumsy administrative expedients in destroying that priceless gift before it is received.

I. Secondary School Regulations. Article 20.

From the first the restriction of free places to ex-Public Elementary School pupils has had unintended results, of which the most important are :—

- (1) It has never afforded the desired guarantee of financial need. I have known the father of a free-placer boast to his son's Secondary Schoolmaster that he paid Income Tax on £4,000 a year. This in pre-war days.
- (2) It is lamentably unjust in cases like the following, which are far from uncommon : Father an able professional or business man, successful, but died early, leaving his widow with slender provision. Child, or children, of excellent ability, but of course not qualified as ex-Public Elementary School pupils. Result : (a) frustrated education of exceptionally good human material ; (b) (even worse) exclusion from the Secondary School of a type of pupil which is capable of being the very salt of school life, setting both its intellectual standards and its tone.

Some (probably many) of the Local Education Authority schemes framed under the 1918 Act seek to avoid the admitted defect numbered (1) above, by the method of income-limits. The application of this test on a large scale involves enormous difficulties in practice. Much office work and correspondence are required to make it even reasonably trustworthy, and unfortunately, but not very unnaturally, some of the (in other respects) best parents will not face it. Still it would be far fairer and better than the crude test of Article 20 if suitable income-limits could be chosen. It is extremely hard to get them fixed high enough, at all events to meet the needs of pupils leaving the Secondary School for the University. In the draft Birmingham scheme the absolute maximum was £600. This may sound a handsome income to the ordinary City Councillor not specially conversant with education. But a parent of this or larger (post-war) income may have two or three sons or daughters of exceptional ability besides other children. In the interest of the community they are eminently worth sending to College, but it will be as much as the father can possibly do to send one of them without substantial assistance. The plan of fixing a maximum parental income and a minimum educational attainment for the pupil (*e.g.*, such mere pass examinations as the free place examination for entry to the Secondary School and the Higher School Certificate examination for assisted entrance to the University) is working very badly in practice, for

- (a) It cripples just the class (of poorer professional men, ministers of religion and the like) from which much of the best intellectual material has always been derived. These people can now neither pay for their children's education nor obtain it without paying for it.
- (b) It fails to make sure of the *very best*, or to make the best use of it if obtained. The pass examination incites no one to exert himself to the full except a pupil of mediocre or low natural intelligence. Its deadening effect upon abler scholars is known to every teacher.
- (c) On the plea of economy it diverts expenditure into the less profitable channels. The very best being always scarce, it would pay the nation over and over again to provide the relatively small sum needed to secure it and train it, even if some parent here and there did take unfair advantage of the situation.

(3) The tenure of a free-place as a kind of freehold, terminable only by complete disgrace, is based upon an error in psychology. No educational emolument should be tenable in this way on the ground of a single examination. All should be continuously earned by the strenuous effort and actual achievement. This has been the rule in my own school for nearly fifty years, with the best possible results. Now we must apparently abandon it for a vastly inferior system. It is an excellent example of the difference between the educational and administrative points of view.

II. *Deficiency Grant (50 per cent. basis).*

This was condemned by the Select Committee on National Expenditure as a money-spending device. The Committee was at any rate right in saying that aided schools could not expect to go on receiving substantive grant as well, the maintained schools receiving none. But in the correction of this relatively unimportant and easily avoided anomaly the "money-spending device" has been extended to the whole field, with really disastrous results. For

- (1) Substantive grant does require to be continuously and positively earned by *educational* success. Deficiency grant is only limited by official regulation of expenditure. The *administrative* character of this regulation is shown by the immediate attack upon salaries, not because they are the most questionable but because they are the largest item of the expenditure.
- (2) The administrative pressure now comes from two quarters—the Board of Education and the Local Education Authority, not always equally enlightened but equally interested in keeping down expenses. It is therefore very severe, but follows no consistent principle of criticism and discrimination—a peculiarly dangerous form of "economy." Not even the most economically-minded City Council will set up *two* Finance Committees composed of different individuals and guided by divergent ideas but each endowed with the power of vetoing or reducing any item of expenditure. Yet this is what may and does happen in the operation of the Deficiency Grant system. Any and every item may be said to contribute to the production of the deficiency, and therefore each of the bodies which have to make it good acquires such a ground of detailed criticism. Substantive grants from the Board and definite contributions-in-aid from the Local Education Authority avoid this danger. Neither of course can be unlimited, but the question *how* the money is to be spent can be decided on real educational grounds. The Board's grant should, however, be assessed on far more flexible and less "automatic" principles than hitherto. The standard as well as the quantity of the work done should be taken into account.
- (3) Under such control the power and responsibility of governing bodies cannot be great, and they are in fact rapidly disappearing. But very much of the success of English Secondary Schools has hitherto been due to local interest and enthusiasm. It is difficult to exaggerate the probable loss if governing bodies become so impotent that men and women of light and leading will no longer sit on them.

III. *Burnham Scale.*

This well-meant effort to attract ability into the teaching profession is already producing unintended but ruinous effects.

- (1) The rigidity of the increment scale immobilises a teacher at or even before the age of thirty. Transference is only open to the younger—because the cheaper—members of any staff.

- (2) But "economy" is leading to staff reduction. More money is saved by dismissing an older than a younger teacher. Thus a new and peculiarly pitiable class of unemployed is being generated. Both (1) and (2) are very well known both to actual and to possible future teachers. Though from various causes there is an apparent plethora at the moment, a terrible dearth of able and competent teachers is certain to arise before long.
- (3) The conversion of the Burnham minima into maxima (contrary to the express provision of the Burnham Committee Report) has done more than anything in my recollection to render the profession unattractive to able and enterprising young men. The adequate staffing of an aided or maintained school which does really advanced work must soon become impossible. Such work will only be done in public or private schools accessible only to the wealthy. Even these independent schools will probably suffer in the long run, the field they can offer being very limited. But the nearer effect will be to kill the national system of Secondary Schools by a process akin to decapitation and to deprive the poorer and middle classes of their best educational opportunities. No service can ever be efficiently recruited which offers no prizes. The one sort of prize left is a Headmastership, but
- (4) Even for Headships the Burnham minimum (of £600—quite possibly too high *as a minimum*) is, despite everything said in the Committee Report, already being regarded as pointing to maxima much less than the salaries hitherto paid in important schools and absurdly below what a reasonably successful doctor, solicitor, or member of half-a-dozen rival professions can earn.

IV. Fees.

To keep these very low, and, still more, to abolish them, is to conceal the actual cost of education and (from the mind of the uninstructed parent) its value. The path of the able poor boy is just as effectively opened by awarding him a scholarship, of which the real pecuniary value should be disclosed (*e.g.*, in a school where the total cost is £40 and the fee £15 a fee-payer is really in receipt of £25 a year, and a free-placer of £40). Scholarships should be of varying amounts, ranging from say half the fee to the whole of it plus a maintenance allowance as well. In practice far more would thus be done to induce the parents of able children to give them secondary education than is done at present, and public money would be saved because more profitably spent.

V. Advanced Course Regulations.

These have done good, principally because the system contains at least an element of the principle of piece-work, or payment according to results. More money has been forthcoming where better work has been done. How this principle will survive when substantive grants have all been merged in deficiency grant I do not know. Meanwhile I find the Regulations very restrictive from the educational point of view.

- (1) My own judgment of what is best for a particular boy often compels me to exclude him from a "course" and in point of fact many of my best boys are thus withdrawn. Enough are left to satisfy the Board's minimum requirement as regards numbers and to earn the grants. But this would not be the case in many schools.
- (2) One of the principal difficulties lies in the two narrow definitions (a) of what constitutes an advanced course and (b) of the studies which can act as a "relief" to the specialised curriculum of the course. Thus every boy in a modern studies course who is learning two modern foreign languages must learn the *same two*, which in practice means French and German. But where teaching-power is available individual boys should be allowed to take *e.g.* French and Spanish, or German and Italian instead. The practical effect of the rule is to exclude both Spanish and Italian in nearly all aided schools. Both are studied in my own but outside the course. Again, while a Modern Language is accepted as a "relief" in a Classical Course, neither Botany nor Zoology is accepted as a relief from Physics and Chemistry.
- (3) These and other restrictions have the peculiarly unfortunate effect of withdrawing boys from school at too early an age. For example, a boy intended for the medical profession is under the strongest temptation to proceed to the University or Medical School directly he has passed Matriculation or obtained the equivalent School Certificate. By doing so he can at once give all his time to his professional studies. If he stays at school to take the Higher Certificate he must give at least one-fourth of his time (fractions not being recognised, this means in my own school eight periods out of 30) to subjects which have no direct bearing upon his profession. I have the utmost difficulty in retaining such boys, though the University authorities generally endorse the view that it is better for them to complete the "Pure Science" part of their course at school. The point could be met by raising the minimum age for admission to a University to eighteen, but this is apparently impracticable and might not even be invariably desirable.

VI and VII are minor but not altogether unimportant examples.

VI. Only *one* School Certificate Examination is recognised for Examination-fee grant (now, by the way, very inadequate in amount) in any one school. I have good educational reasons for wishing to take the Oxford and Cambridge Examination in two forms and the London Examination in two other forms, but administrative convenience (I suppose, though it is difficult to see how or why) overrules them.

VII. *Free Stationery.*

- (1) Leads to two kinds of actual waste, viz.: (a) careless use of paper, etc., by boys; (b) additional staff-labour and even cost in the effort to check (a). I know of two schools of similar size, in one of which the stationery bill is about double what it is in the other. The difference represents no educational superiority whatever and implies a waste of about £120 a year.

- (2) Is distinctly and perceptibly demoralising. I once had a pupil at Harrow who was perpetually losing his school books and coming to me for orders for new ones. I wished to point the moral that such conduct was, among other things, unfair to his people. But the boy's father was a millionaire. Free stationery reduces all boys to this unfortunate position.
- (3) Is quite unnecessary. Stationery is a small item to the individual parent, though in the aggregate a considerable one to the school. The comparatively few cases in which the provision of the requisite stationery is a real difficulty to the parent could be easily met in other ways. If the balance of public money must be spent at all it would be far better laid out on books.

Experiments in Individual Work :

A further enquiry as to the value of Private Study in Schools

BY E. J. G. BRADFORD.

Synopsis of the First Investigation.*

Individual work is a method of instruction which is rapidly gaining favour in the schools. It is a method that is often applied indiscriminately to all the members of a class. Is this policy a sound one? Do all the pupils derive adequate profit from the time spent, for example, in studying passages from text-books and note-books with the object of acquiring information?

The following method was adopted for obtaining definite evidence bearing on the problem. On two occasions, at an interval of a week, short passages taken from a geography text-book were given out to a class. The pupils were instructed to learn the passage by repeatedly reading it through. As a test, the same passage, from which about 25% of the words had been omitted, was given out with instructions to complete the passage. A second form of test was used; the material for this consisted of a list of thirty words of a similar character to the 25% omitted from the prose passage. This list was given to the class to learn, and they were subsequently required to reproduce the words in any order; the words were collected in the correct order by the examiner. The list of words and the prose passage were divided into ten approximately equal sections, and each child was credited with the number of sections which he or she reproduced correctly.

The tests were given to about 300 children composing the six Std. VI classes of four elementary schools. Each class-list of scores for the prose passage test was divided into three parts, containing an equal number of children. The upper thirds of each class were combined into one group; the middle and lower thirds were similarly combined.

It was found that the first section of the word list was reproduced by 80% of the children, success diminished gradually to the seventh section with 37%, but increased again to the last section with 65%. This fall and subsequent rise is also shown in the learning of nonsense syllables.

The first section of the prose passage was completed by 87% of the children, but all the remaining sections were reproduced by approximately 50%. The difference in the form of the curve of scores of the two tests suggests that the latter is not, in the main, a test of mechanical memory, but that the former is.

The lower thirds of four of the schools had a mean score, for all the sections except the first, of only 5% correct. The first section, however, was almost as frequently completed by them as by the children in the other thirds. Was this success due to mechanical "parrot work"? The passage could not be regarded as too difficult because the upper third of the best class tested gave 100% correct in all but two sections.

The conclusion arrived at was that about 30% of a Std. VI class are incapable of profiting by time spent on this form of individual work.

* An account of this investigation was published in the *Journ. of Exp. Pedagogy*, June, 1922, p. 294 ff.

Unless practice or definite training can be shown to result in marked improvement we must accept the fact that possibly 20% of the school population will be, when they leave school, unable to read *for the purpose of instruction*.

The Second Investigation.

The second experiment, an account of which is given below, was planned in order to test the effect of practice on this special form of individual work. At the same time further evidence is furnished in support of the conclusions drawn from the data provided by the first experiment.

Two classes in a mixed school (School P.), Std. VI girls and Std. VI boys, were given ten tests spread over a period of two months, at intervals of approximately one week. The first and last tests were the same as those given, at an interval of one week, to the classes tested in the first investigation. The material for the intervening tests was taken from the Piers Plowman Histories, Books V and VII, which were entirely new to the children. In order to ensure individual work, Books V and VII were distributed in alternate desks ; those children who had Book V one week being given Book VII the next. The passages chosen varied in length from 120 to 150 words. Seven minutes were given for study, and after an interval of two minutes a further seven minutes for filling in the blanks on the test paper. After each test the results of the previous test were read out ; this stimulated effort and produced a keen rivalry between the two classes.

The subject matter of the first and last tests was geographical, while that of the intervening practice tests was historical, hence any practice effects will not be due to the influence of subject matter but to more thorough grasping of the test material or to the adaptation of their efforts to the special mode of testing. Even though the improvement be entirely due to the second cause the gain is of considerable value because it means that the children have paid special attention to the author's form of expression, his sequence of words. The continued attempts to use the vocabulary of the author of the text-book cannot but have a beneficial effect in developing the child's own vocabulary and fluency.

Comparison with the classes tested in the first investigation shows that improvement does take place as the result of practice. The improvement in the class average score is considerable, as will be seen from the table below :

School.	Number of Pupils.	1st Test Mean Score.	%	2nd Test Mean Score.	%	Difference %.
A. Girls ....	.... 55	13·7	62·5	24·8	82·7	20·2
A. Boys ....	.... 41	12·4	56·4	22·9	76·3	19·9
B. Mixed ....	.... 54	10·5	47·7	15·1	50·3	2·6
C. Girls ....	.... 47	10·1	45·9	13·0	43·3	- 2·6
C. Boys ....	.... 43	9·8	44·6	15·5	51·7	7·1
D. Boys ....	.... 48	5·8	26·3	13·1	43·7	17·4
P. Girls (practised)	40	9·1	41·2	18·6	62·0	20·8
P. Boys (practised)	54	10·4	47·2	16·6	55·3	8·1

In the above table School P. is the school where the practice tests were given. The improvement is more clearly demonstrated by comparing Schools B. and C. with School P. There were 144 children in the

classes drawn from the first two schools and 94 children drawn from School P. All these classes gave about the same mean score at the first test :

Schools B. and C.	% score first test	45·6	% score last test	49·2
School P.		45·0		58·0

The gain resulting from practice is equivalent to 20% of the score of the unpractised classes.

Is the improvement uniform in all three sections of the class and in each section of the passage studied ? It would appear from the scores given below that the improvement is fairly uniform throughout the test passage but not throughout the class. The improvement is greatest among the best third of the class and least, in fact generally absent, among the worst third.

School P.	% score first test.	% score second test.	Gain
Upper third	61·4	87·0	25·6
Middle third	45·0	60·7	15·7
Lower third	25·0	23·0	—

The absence of improvement shown in the above table is due to the class of boys. The girls showed a slight improvement which is masked in the combined result.

Percentage of Children completing each Section.

Section correctly completed	1	2	3	4	5	6	7	8	9	10
School P.	93	16	50	32	35	49	49	58	33	56
Schools B. and C.	81	17	26	15	30	46	25	46	32	38

The success of the practised group is rather more evenly distributed over the whole passage. If the first section of the test passage be eliminated, then the mean percentage of sections correctly reproduced by the two groups of children are :

Practised Group 42% Unpractised Group 30·6%

The influence, which the position of a section has on its chance of successful reproduction, is shown very clearly both in the first portion of the initial test passage and in the corresponding part of the final test passage. The initial test passage was divided into eight sections, and the percentage of children who successfully complete each section is given in the next table. The score obtained for the first section is very much lower than it would have been, had "grow" been credited as being equivalent to "ripen." The results are those from Schools B., C. and P. combined, 238 children in all.

THE FALKLAND ISLANDS.

1. Owing to the want of *sunshine*, wheat will not *ripen* at all, 49%
2. and *oats* and *barley* but rarely, while *vegetables* can hardly be grown. 66%
3. Only one possibility of utilising such *land* suggests itself, and that is for *sheep* farming. 44%
4. *Cattle* are also kept, but it is on their *flocks* of *sheep* that the islanders depend chiefly. 29%

5. The resultant *wool* with some *mutton* is exported, with *hides* and tallow. 24%

6. There are no *minerals* and no important *fisheries* in the strict sense, 6%

7. but *whaling* is carried on in the adjacent seas, especially round South Georgia, which lies much further *south*. 25%

8. In exchange for their *wool* and the products of the *whale fisheries*, the inhabitants obtain practically all the necessities of *civilised* life. 6%

(The words in *italics* were omitted in the test paper.)

The influence of the ability to memorise in a mechanical manner, of rote memory in other words, is not very great in deciding in which group of the class the individual will be included. The correlation between the individual scores in the prose passage test and the list of words test is in every class very low. The mean correlation coefficient is .25, the P.E. in each case being about .10.

Correlation between Prose and Word tests.

School A. boys .28	School B. .27	School C. boys .21
School A. girls .21	School B. .31	School C. girls. No word test.

The comparative success of the different thirds of the classes in the word test does not correspond with their success in the prose test. The comparative figures suggest that the upper third of the classes excel in virtue of their ability to comprehend the passage; the middle group succeed in virtue of their ability to memorise as readily as the upper group, though they do not comprehend so readily; the third group fail because they lack the power of comprehension besides being inferior to the other groups in memorising ability.

School.	Number of children.	Total words Upper third.	Number of children.	Total words Middle third.	Number of children.	Total words Lower third.
A. Girls	17	322	20	373	17	304
A. Boys	13*	211	13	178	10	109
B. Mixed	17	271	15	254	16	213
C. Boys	14	249	15	251	13	185
D. Boys	15	218	14	199	14	165
Mean % of total		56		54		46
Sections of prose						
% correct		66		48		21

The upper thirds can reproduce in the average 56% of the list of words correctly, and 66% of the sections of prose. The middle thirds can reproduce 54% of the words but only 48% of the sections of prose. The lower thirds can reproduce 46% or three-quarter of the number of words that are reproduced by the upper thirds, but only 21% of the prose, that is, one-third of that reproduced by the upper thirds. This may be regarded as further evidence in favour of the contention that the prose completion test is a test of comprehension rather than one of rote memory.

* The numbers are smaller than those in the previous table, because a few children were absent on the morning when this test was given.

The ratio between the scores of the upper and middle thirds is very constant, but that between the middle and lower thirds is more variable. The latter ratio is lower than would be obtained from a normal distribution owing to the number of retarded children tending to produce a skew distribution.

		Upper third.	Middle third.	Lower third.
Practised Group.	Initial test	61·4	45·0	25·0
		Ratio U/M 1·37	Ratio L/M ·55	
Unpractised	Final test	87·0	60·7	23·0
		Ratio U/M 1·43	Ratio L/M ·38	
Normal distribution	Final test	66·0	48·0	21·0
		Ratio U/M 1·38	Ratio L/M ·44	
		Ratio U/M 1·39	Ratio L/M ·61	

A comparison of the scores of the practised and unpractised groups at the final test show that practice tends to increase the differences between the thirds of the classes. The upper thirds have a relatively greater score, the ratio being 1·43 as against 1·38 ; and the lower thirds have a relatively smaller score, the ratio being ·38 as against ·44.

General Considerations.

If the first sentence of a passage is in such a favoured position as the experimental results suggest, then the teacher in drawing up a set of notes to be learned should make the utmost use of the influence of position. It would be a gain to the learner if in school text-books the paragraphs started with a vital statement or one which could be regarded as a generalisation of the remainder of the paragraph. The arrangement of subject-matter in text-books, and especially in note-books, will become a matter of greater importance with the growth in favour of the Dalton Plan and its modifications.

A trained adult with a systematised body of information at his command will be able to pick out the essential sentences in any paragraph which he studies, in virtue of the fact that his knowledge represents a system of information. The school child of eleven years of age has not a coherent system of knowledge which will focus his endeavour. The lack of this coherence of information is the basis of one of the Binet tests for the eleven year-old child, viz., to give sixty words in three minutes. If it is psychologically unsound to expect a child adequately to focus his efforts, to make his efforts purposive in detail, then it must fall to the lot of the teacher so to arrange the material that by continued straightforward reading of a passage the most vital portions of information will stand the greatest chance of being assimilated.

Although the weaker thirds of the classes can reproduce but little yet they can master the first section of a passage. Hence in drawing up notes to be learned the teacher's first thought should be " What will the weaker ones learn ? " because the influence of position is much more noticeable among the weaker children.

The two passages chosen for the tests, both of which were taken from a modern school text-book, provide a suitable illustration of the point under consideration. To know that Trinidad is " rather smaller than Lancashire and has a population of 300,000 " is not the most

important thing to be learned about the island, either as a fact in itself or as a piece of information which will be of value in systematising further information. To know that in the Falkland Islands "Owing to the want of sunshine wheat will not ripen and barley and oats but rarely," is to have information which is the key to the mode of life in that country; the people must be engaged in hunting, pastoral or mining pursuits, and live largely on imported foods. If the passage describing Trinidad had begun "It is a mountainous island with a hot, damp climate whose east coast is exposed to the trade winds," or "It is an island with a hot, damp climate well suited to the growing of cacao and sugar cane," these sentences would have furnished the key to the remainder of the paragraph.

The improvement brought about by ten practice periods spread over two months suggests that this method of taking private study and *testing it*, would result, in the long run, in considerable benefit to the majority of the pupils. The actual class time spent was only twenty minutes for each practice. It is a type of work which lends itself readily to competition where the classes are organised on a team basis.

An important feature of the results is the demonstration of the small amount of material which can be mastered in the given time. After 130 words have been studied for ten minutes, which would allow the passage to be read through about ten times, only 50% of it has been mastered by the class as a whole. A single page of a condensed geographical text or notes is apparently as much as can be mastered in anything like detail by a class of this age in half an hour devoted to study. There is always a tendency for the pupil to "skim over" the text and to mistake mere familiarity for information really mastered. The elision method of testing is valuable in that it encourages attention to the details of the text. We are not successful in training children to learn, because we do not give them definite practice which is adequately tested nor do we guide their efforts to tasks which are definitely commensurate in length with the pupils' ability. Every class of ten years of age and over should have at least one period per week devoted specifically to learning from prose texts. The practices need to be of two kinds; for example, the reading of a lengthy passage, after which the essentials of the theme are reproduced in a short précis, and on the other hand, an intensive study of a short passage for the purpose of mastering the details. Both of these modes of study are exceedingly valuable, yet practice in one can hardly be expected to improve efficiency in the other. In the study of arithmetic it has been conclusively shown that specific training is necessary. We do not now believe in problem work as the best means of training mechanical accuracy, nor in mechanical rule drill as the best training for problem work. The difference between intensive and extensive reading will have to be recognised, and catered for, as soon as the need for definite training in this form of activity is considered worthy of special attention.

The relative success of the different thirds of the classes at the prose completion test and at the word list test suggest a classification of the pupils' abilities which might be used with advantage in classes whose work was organised on the Dalton Plan or a modification of it. The upper thirds excel in comprehension, the middle thirds are as good as the upper section of the classes at mechanical memorising but weaker in

comprehension, while the lower thirds are inferior in both forms of activity but relatively not so weak on the mechanical side. Although much reliance cannot be placed on such small differences (only equal to the P.E.), yet it is interesting to note that the correlation coefficients between the prose and the word list tests are in keeping with this suggested analysis. School D., the weakest, gives the highest correlation, .31, presumably because both tests tend to resolve themselves into mechanical memory tests; there is less comprehension brought into play. School A., the best, gives the lowest correlation, .21, because one test tends to be a comprehension test and the other test allows little scope for comprehension.

The first group may be regarded as being furnished with a good memory, supported by powerful comprehension of verbal symbols. These children can be left very largely to fend for themselves, if suitable work be provided for them. The second group is furnished with a good memory which is handicapped by weak comprehension of verbal symbols. With the aid of the teacher who carefully prepares the material for their assimilation, they could cover very much the same course as the first group. They could at least memorise the results of the teacher's comprehension. The third group is furnished with neither a good memory nor efficient comprehension. By dint of regular drill, memory habits can be formed, but undoubtedly the children of this group will not profit by individual study as contrasted with individual manipulative work of a muscular character.

In a large school with three graded classes of the same school age where three periods a week were devoted to, say, history or geography, the advanced class could profitably be given one lesson and have two periods for individual study. The middle class might be expected to cover very nearly the same syllabus with two lessons a week and one period devoted to private study. The third class would with little profit attempt the same syllabus; in this event the work of the children in this class would resolve itself very largely into drill work; the alternative being work of a different character from that attempted in the other two classes. The division of each class in the school into two divisions, with promotion for the brighter pupils every six months and for the less bright every twelve months, is a method of organisation which in the light of this investigation appears to be admirably suited to the top and middle sections of the class but not to the bottom thirds: twenty-four months of ordinary class teaching "in bulk" will hardly compensate for their limited capacities. A tripartite division, associated with a carefully thought out scheme of individual work, would produce a maximum of elasticity in the organisation, and be more adaptable to the different grades of individual ability. No doubt the ultimate compromise between the Dalton scheme and the present-day organisation will take some such form in elementary schools. Private study may be a remedy for certain weaknesses in our educational arrangements, but it cannot be regarded as the way of salvation for the (socially and intellectually) less valuable combinations of inherited characteristics which are represented in the lower 30% of every school population.

The Value of Intelligence Tests in Scholarship Examinations.

By R. R. DOBSON.

THE following note describes some conclusions drawn and some impressions gained during an attempt to supplement an ordinary annual examination for free places by an oral examination with intelligence tests. The experiment was carried out at Cheltenham Grammar School during 1922. The writer believes that this is the first examination of its kind (*i.e.*, oral tests over such a large number) in this country.

In this school there are about six children examined for each free place; and during the year in question about 150 candidates sat for twenty-six places. The children must be under twelve years of age and are mainly over ten. By the regulations of the Gloucestershire County Council any child, whose parents desire it, may attend the examination for a free place at a secondary school. The examination is in English and Arithmetic.

For this year's examination the papers were set by two headmasters of secondary schools in conjunction with the senior English and mathematical masters of my own school. The examination took place in May. The papers of the candidates for my school were marked, the Arithmetic by the senior mathematical master, and the English by the senior English master.

After ten years' experience as an examiner of the papers sent in and by subsequent observation of pupils admitted to my own school, it has become fairly obvious to me that, despite the greatest care in ordinary scholarship examinations both oral and written, a certain number of scholars are admitted who should not be, and probably a greater number of pupils are rejected who deserve admission.

The object of an entrance examination is, of course, to choose the most mentally alert boys as distinct from those whose standard of attainment is high in virtue of efficient teaching, cultured homes, and even careful coaching for the examination itself. The difficulty of getting the best boys is further complicated by the fact that the quality of the teaching staff varies very much from one elementary school to another. For example, several of the candidates come from small schools where the whole of the teaching of the children from five to twelve years of age is undertaken by a head mistress and a supplementary teacher. On the other hand, in one or two larger and better staffed schools the pupils are specially coached in a scholarship class.

To nullify these variations in staffing and in facilities for teaching and coaching, to discover boys of superior ability apart from acquired attainments, and so to secure more successfully the real purpose of the scholarship examination, I decided to see all the children who entered and to test them individually in the three months preceding the written examination. For this purpose I employed the Graded Reasoning Tests devised by Mr. Cyril Burt, psychologist to the London County Council. These questions have been carefully standardised by Mr. Burt and arranged in sets, six tests for each year of age. The tests are arranged in order of difficulty in each year.

By the kindness of the heads of the various elementary schools six boys came to me on each afternoon during the Easter term. The boys were arranged in a classroom next to my room, a convenient distance apart, and were in charge of a master or a prefect.

The questions were printed on separate slips of paper, one on each slip. A boy of ten years of age commenced with questions for boys of nine. A question was given to each boy, who read it over and then considered it in the classroom. On finding a solution he raised his hand and came in to my room to give the answer.

There was no limit to the time allowed, but generally the examination of each six took from one and a half to two hours. The questions were given in order and continued until a child failed in three consecutively. All the test questions were given in the eight weeks from the third week in January to the third week in March.

Correlations have been calculated between the various forms of examination both for the entire group of children regardless of school and for those coming from each of the several schools separately. For the entire group the coefficients are as follows : (1) reasoning tests and written papers, .41; (2) the two written papers, Arithmetic and English with each other, .53. For the school which sent in the greatest number of candidates the coefficients were (1) .56 and (2) .58 respectively. The remainder of the schools sent in too few candidates for the coefficients to be worth enumerating separately ; but the correlations throughout appear to be of much the same order. It seems clear, therefore, that the superior general agreement between the two written papers is largely attributable to the fact that variations in school efficiency affect all school attainments in a similar way ; and the lower correlation obtained between the oral and written tests seems a reflection rather upon the ordinary scholarship examination than upon the special tests of intelligence. Where teaching is uniform—for example, within one and the same school—whether it be good or bad, there the written scholastic examination may give a fair estimate of comparative intelligence among the boys of that school ; but where teaching conditions differ greatly, there such an examination is by itself less just. That this inference is sound seems borne out by a detailed study of the results both of individual cases, where the two examinations gave discrepant estimates, and of the several contributory schools.

The following deductions may, I think, legitimately be drawn :—

(1) Boys whose mental age was greater than their chronological age for the most part obtained good marks in the written examination and *vice-versa*. This was so marked in many schools that the selection of pupils could have been made without the necessity of a written examination. (I do not, of course, mean that the written papers should be abolished, and an intelligence test substituted for it ; for after all to attend a grammar school a child must have some degree of attainment.)

(2) The teaching in the elementary schools in a mixed area varies far more than is generally supposed, some being very efficient and some inefficient. Given equal teaching many children would have done much better in the attainment tests ; and further many more children are

mentally equipped for admission to a secondary school than, owing to their poor attainments, can be discovered or admitted under present conditions.

(3) In one elementary school situated in a poor neighbourhood the average mental age was as low as the average attainments ; whilst in the school situated in the best part of the town the mental age was unusually high. Thus, a prosperous family has a triple advantage : not only is the home culture superior and the level of the neighbouring school high, but the inborn intellectual quality of the stock is also, as a rule, high.

(4) One elementary school which has obtained good results in the free place examination for several years seems to attract a number of boys of good ability from other areas of the town.

(5) The country schools for the most part send few candidates for the examinations ; and these boys, although at least equal in mental efficiency to the town children, do not reach so high a standard in the written examination, showing that there is much difference in the staffing of a country and a town school. Of course, this "lower mark" in the written tests might be due to the different interests of the two sets of children, but after careful consideration of the questions set I do not think that the town children were unduly favoured.

(6) Intelligence tests are undoubtedly of great value as a check upon the scholarship examination and as a useful subsidiary criterion for border-line cases. In those exceptional cases, too, where a boy, contrary to the expectations raised by his superior appearance, manner, and home conditions, fails to do the work of the class in which he has been placed the intelligence tests are of great value as indicating that the native ability of the boy is for some reason poor, and that his apparent merits in the scholarship examination were purely the superficial and transitory effects of fortunate conditions.

Some Aspects of German Education since the Revolution.

By M. F. LIDDELL.

IN Germany, as in England, educational reform has long constituted one of the stoutest planks of the Socialist platform. The Erfurt Programme of 1891 (Article 7) demanded the secularisation of education, universally compulsory elementary schools providing free instruction, school material and maintenance (*Verpflegung*) for all scholars, and the provision of free instruction, material and maintenance for all possessed of sufficient ability to entitle them to higher education. By the revolution of 1918 full power was placed in the hands of the Social Democratic Party. What have been the consequences as far as education is concerned?

"The greatest event of the German Revolution," it has been said, "is the dethroning of the Prussian junker." The educational services, too, have felt the broom of the new regime, although nothing resembling a root and branch weeding-out of "undemocratic" elements has been effected or even attempted. Like other revolutionary governments, the Republican administration (a) has not been long in discovering that it is impossible to extemporise a new civil service overnight. It is only the "heads of departments" who have changed; *à propos* of which topic, and in view of frequent assertions to the contrary, it is worth while stating that the famous interlude of Herr Adolph Hoffmann—a painfully unsuitable stop-gap of decidedly unacademic antecedents, who enjoyed a brief spell of power at the Prussian *Kultusministerium*—is not to be regarded as characteristic. His successors, e.g., Herr Konrad Haenisch (a university-trained journalist), Professor Carl Becker (the well-known Oriental scholar), or Prussia's present Minister of Education, have been men of a very different stamp; nor is the association with them of a son of Professor Adolf von Harnack without significance. Civil war, however, financial stress, and other difficulties of the hour, coupled with the necessity of drawing up a detailed programme acceptable to both Socialists and Clericals, have all combined to render the progress of educational reform a good deal less rapid than extremists had hoped. To a large extent, indeed, notwithstanding all that has been already accomplished, things are still at the "melting-pot" stage.

There is, for instance, the question of the *Einheitsschule*. To the German schoolmaster of democratic persuasion this has always seemed the *summum bonum* to be striven for. No more class barriers in the educational world! No perpetuating of existing differences between *Volksschule* and *höhere Schule*! The same type of school for the children of rich and poor! Consistently applied, this principle would have revolutionised Germany's educational system from top to bottom. Its ultimate realisation is as definitely a part of the Socialist programme as is, say, the nationalisation of the means of production. Yet to the superficial observer the German *Schulsystem* of to-day appears very much what it was in 1914. *Gymnasien*, *Realgymnasien*, *Oberrealschulen*, *Mittelschulen*, conducted and staffed as before the war, still exist side by side with the *Volksschule*; even private preparatory schools, the abolition

(a) It will be remembered that under Art. 10 of the Weimar constitution the "principles" ("Grundsätze") to be followed in education (as in certain other departments) are to be the subject of federal legislation.

of which is decreed by Article 147 of the Weimar constitution, continue to flourish (b). Only the “*Grundschule*” (“foundation school”), supplying a standardised training for the first four school years of all, rich or poor, has arrived (1921) as the first instalment of the *Einheitsschule*. The characteristic features of this new type of institution, its cultivation of manual dexterity, of local lore and of local dialect, as well as the importance now attached to open-air instruction, certainly represent a new departure, although the effects on the social life of the nation so far do not seem noticeable. The establishment of “complete secularisation,” too, has had to give place to “local option,” a decision which, in the opinion of a recent observer, “has opened the door wide to sectarianism.”(c)

The older schools remain, but the democratising tendencies of the times have left their marks upon them. Chief among these latter is the institution known as the “parents’ council” (*Elternbeirat*). Its purpose, according to the regulations framed by the Ministry of Education, is “to develop and strengthen the relations between school and home, and to safeguard the co-operation between parents and school and their reciprocal influence.”(d) With this end in view meetings of representatives of parents and guardians are to take place at regular intervals (at least once in every six months) “to give expression to those wishes and suggestions from parents which have reference to the conducting of the school, its discipline and the physical, mental and moral training of the children as far as they do not deal with individual cases, but are of general import.” The tendency of the scheme, supplemented as it is by the appointment of delegates elected by the scholars of the senior forms who are to mediate between their classmates and the teaching staff, requires no demonstration. Here again, however, it may be questioned whether this official introduction of the democratic principle into the school world has so far been productive of any particularly striking results. The enthusiastic response given to extreme monarchist propaganda by German upper class youth, the lightning-like spread of the shnastika (anti-Semitic) movement, the difficulties encountered in not a few cases by pro-revolution headmasters and examiners called upon to work with monarchist colleagues, all bear eloquent witness to the contrary. The assassination of Dr. Rathenau by a nineteen year old *gymnasiast* and the subsequent calling of a special conference of the Ministers of Education of the various German States to take concerted measures (e) “to protect the Republic,” also throw a vivid light on the large amount of work still requiring to be done before the *Gymnasium* will be safe for democracy.

Continuation schools, instruction in which (under Article 145 of the Weimar constitution) is to be free, attendance being compulsory until the completion of the scholar’s eighteenth year, continue to be an essential part of the German educational system. Supplementing them, however, a new type of institution has recently come to the front, the *Volkshochschule*, or People’s University. Space forbids a detailed description of their organisation and curricula; suffice it to say that they aim at

(b) Some of these, it is true, have only been able to prolong their existence by describing themselves as establishments for backward or mentally deficient children, etc.

(c) Cf. Joh. Fischart, *Das Alte und das Neue System*, 1920, Vol. II, p. 184.

(d) Cf. *Times Educational Supplement*, 4th Feb., 1922, p. 49 (“Changes in German Education”).

(e) Cf. Article this number, “Citizen Training in Germany.”

supplying courses and lectures of the university extension type to all, youths, men, or women, interested or likely to profit by them and that institutes of this sort are now to be found in every German town of any size. The English adult school movement, as represented by centres like Fircroft and Woodbrooke Colleges, if not exactly the W.E.A., suggests the most obvious parallel. There would appear to be some doubt whether the actual function of these "folk colleges," such as it has come to be, is altogether in accord with the aims of their original founders. Thus it has been asserted that the working classes—to use the old-fashioned term—are not supporting the *Volkshochschule* as energetically or in anything like such large numbers as had been anticipated. "The bourgeois attends, the workman stays away!" (g) Small reading circles, devoted to the study of a particular author or dramatist, appear to be more popular. The Academy of Labour at Frankfurt am Main, "a German Ruskin College," which began its first term in May, 1921, is expressly adapted to the requirements of the proletarian student.(h)

There are those who hold that the most characteristic product of nineteenth century Germany has been the university professor. How has he fared since 1918 and what are the most outstanding changes to be chronicled in the academic sphere? The desirability of certain reforms(i) more particularly in the direction of curtailing some of the privileges enjoyed by the ordinary professors, has been a topic of discussion since the Salzburg Conference of 1907; here again, however, the motto has had to be evolution, not revolution. The anti-progressive deadweight of the older members of the university senates (most of whom were also staunch Conservatives in politics) has been diminished by the passing of a Superannuation Act compelling all university teachers to vacate their chairs on attaining the age of sixty-eight. (j) Their places are taken by younger men, in the selection of whom the Government will have the final word. The advantages accruing to the powers that be by this new opportunity of tuning the pulpits require no illustration. Not an inconsiderable number of senior professors, including several well-known Pan-German leaders, may now be expected to retire from the stage at an early date. Another significant innovation has been the granting of a certain amount of self-government to the undergraduates, whose *Studentenausschüsse* had hitherto been no more than a shadow of the Students' Representative Councils in vogue at the Scottish and certain English universities. Philanthropic institutions wholly managed by and for students, such as relief funds, library committees, and employment agencies, now exist everywhere and are doing good work. (k) As in the case of the "higher schools," however, no hasty conclusion should be based upon this application of the democratic principle. It has been pointed out, in fact, that

(g) Professor W. Dibelius, of Bonn University (in a letter to the writer). Cf. also Mr. J. Steppat, *Times Educational Supplement*, 29th Sept., 1921 ("The genuine working man entirely ignores the *Volkshochschule*").

(h) Cf. An article by the Principal of the Academy, Herr Eugen Rosenstock, in *Journal of Education*, Jan, 1922, p. 28.

(i) Cf. *The Pedagogical Seminary*, June 1917, p. 156 ("University Reform in Germany").

(j) The emeritus professor may continue to attend meetings of his Faculty (although not to vote) and is not debarred from continuing to lecture.

(k) It is scarcely necessary to allude to the financial stringency, frequently resulting in extreme destitution, even actual starvation, which has rendered bodies of this sort necessary. Many German students now follow other occupations during part of the day, returning to their studies at night.

but for the existing spirit of class hatred, more particularly of anti-Semitism, which is to-day dividing German university society more fiercely than ever before, the success of the above-described experiments would be much greater than it has been. Many "corporations" especially, including the *Burschenschaften*, some of which now threaten to expel members marrying Jewish or coloured wives, continue to be hotbeds of reaction.(l) The Revolution, in short, is still far from having captured the universities.

The total number of students (men and women) has almost doubled since 1914. Law, the political sciences, and agriculture prove to be the most popular subjects ; to the detriment, it is worth noting, of history, philology, and theology, all of which departments show a decided decrease in membership. The technical colleges also continue to be crowded (23,214 students in 1921, as against 12,458 in 1914). Foreign students, especially those coming from "richer" countries, are made to pay higher fees. The question of accommodation has been complicated still further by the demand of elementary school teachers to be trained at the universities side by side with the future *Oberlehrer*, instead of, as hitherto, in special "teachers' seminaries." Most academic authorities so far have met this suggestion with an uncompromising *non possumus*. Even apart from considerations of space (it is estimated that a change of this sort would automatically double the number of students to be provided for) the quality of university work would, they argue, be very seriously affected by such an influx of insufficiently grounded newcomers. The elementary teachers, on the other hand, stress the fact that there is no other way of securing equality in the teaching profession. No decision has as yet been arrived at ; it appears, however, that the institution of separate colleges affiliated to a university, in which the prospective teacher would receive the more strictly professional part of his training, will prove to be the ultimate solution. At the time of writing (m) the problem is still being debated.

It remains to mention the three new universities, Frankfurt am Main, Hamburg, and Cologne, which have been created since 1914 (Strasbourg and the former Königliche Akademie of Posen—now a Polish university—have, of course, dropped out.) All are *Volluniversitäten* in the sense that they are able to confer degrees and enjoy the usual academic privileges, although both in their constitution and in their functions they differ to some extent from the ordinary type. Cologne, for instance, which is financed exclusively by its mother city, may almost be described as a municipal foundation, although the state in return for recognising the new university, has reserved to itself the right of selecting the professors, from a list submitted by the senate. Frankfurt, again, originally came into being as an endowed college, although it now receives a grant from Government funds and has likewise had to surrender the right of making appointments to its professorial staff. It is particularly strong in commercial subjects, including political economy, and in medicine. The University of Hamburg first made a name for itself as a "colonial institute," and still specialises to a large extent in "*Auslandskunde*"—meaning thereby modern and oriental languages, including Russian, Chinese, and Japanese, European history and phonetics. It also possesses

(l) Cf. L. L. Schücking, "The Difficulties of Democracy in Germany"
New Statesman, 2nd April, 1921, p. 750.

(m) January, 1923.

an "Economics Bureau" ("Wirtschaftsarchiv"), housing, among other things, a magnificent collection of newspapers and newspaper cuttings from all parts of the world. (n)

None of the three new universities, it may be added, possesses a theological faculty. Their future development, like that of German education in general, constitutes one of the most interesting problems to be found in modern Europe.

The financial position of German *Wissenschaft* has of late been the subject of a considerable amount of discussion. Are things as bad as Professor v. Harnack represents them to be? No one who has moved in German academic circles during the last four years will feel inclined to answer this question in the negative. Whatever his politics, or his views regarding the actual amount of wealth available in Germany to-day, he will be in no doubt as to the short commons on which the war has put the German scholar. Perhaps the Berlin professor who informed the present writer some eighteen months ago that he was then wearing his last suit, had stated his case a little melodramatically. At all events, he is still lecturing, and the condition of his wardrobe does not yet appear to have provoked public comment. A little after the time here referred to the English Department of the University of Bonn contributed a more striking illustration to the discussion by cancelling their order for the weekly edition and literary supplement of *The Times*, the reason being that the amount of the subscriptions had come to exceed their annual income by some 600 marks. Foreign periodicals and current scientific literature are now beyond the reach of most German scholars. Research work involving the use of such or necessitating the buying of expensive books (and for the German student of to-day all books have come to be expensive) has to be avoided or dropped. Even the Tauchnitz Collection, once the stand-by of all students of modern languages in the Fatherland, has become inaccessible to most of its former votaries. The University of Cologne actually possesses no library of its own at all, post-war prices having made it impossible to afford such a luxury. The *privatdozent*, or junior lecturer, whose only official source of income consists in the capitulation fees paid to him by his pupils, would have been crushed out of existence altogether were it not that the authorities, recognising his plight, have recently taken steps to secure him a minimum wage in the shape of exhibitions or "engagements to lecture" (*Lehraufträge*). It is pointed out, however, that this arrangement is to be regarded as an emergency measure only and must not be taken as a precedent. "You yourself are now drawing a larger salary than most of our professors." It is thus that a German savant summed up the position to his English visitor, an assistant lecturer at Birmingham University. The Anglo-Saxon reader, if he is a university man himself, will require no assistance in grasping the moral of this statement. German Education is still a factor to be reckoned with. The men who are directing it are following definite aims, and they can claim to have made a certain amount of progress since 1918. The difficulties confronting them, however, are such as to amount to an almost impossible handicap, and they are not likely to be lessened for a considerable time to come.

(n) The subject of the professor of English at Hamburg is officially defined as "The Language and Civilisation of England." The *Osteuropäische Institut* ("Institute for the study of East European countries and languages") recently established at Breslau, also illustrates the importance attached in Germany to the study of "Realism." *Fas est et ab hoste doceri!*

Citizen Training in Germany.—New Regulations.

CONTRIBUTED AND TRANSLATED BY MARGARET STEPPAT.

As the result of the murder of Dr. Rathenau, a conference of Ministers of Education of the various German states was held, which agreed on the following measures to be taken in educational institutions throughout the Reich to protect the Republic.

The co-operation of the school in strengthening the Republic comprises measures for training in citizenship and for discipline.

I.

To train in citizenship educational authorities should consider the following points :—

1. The politico-pedagogic tendency of school text-books in history has hitherto favoured the monarchist form of state. It is necessary to provide history text-books, which, while adhering strictly to historical truth, give greater prominence to events and influences which tend to awaken and train the sense of responsibility of the republican citizen and of his position towards the state and society. The history of very recent years ought to be based on documentary evidence which will, if necessary, be procured with official help. School libraries must be examined with the same end in view.
2. Instruction in citizenship as part of the regular curriculum is to be introduced in all schools where it is still absent. The necessary text-books must be prepared with the help of the educational authorities.
3. The time tables are to be brought into harmony with the new aim in citizenship.
4. Similar opportunities for training in the subject are to be provided for teachers in training. In the Universities the necessary arrangements for education in citizenship are to be made. For teachers in active service, whose subjects are citizenship and history, the vocational associations should, as far as possible, co-operate in providing suitable means for furthering knowledge.
5. A committee attached to the Home Office, and consisting of representatives of educational authorities, experts in history, constitutional law and pedagogy, who shall make suggestions and advise with regard to the revision of old and the provision of new text-books and class room aids, shall be at the service of all those who are charged with the carrying out of these measures throughout the realm.

II.

The realisation of these measures demands a teaching staff in all schools and especially in the Universities which is equally conscious of its responsibility in training youth and of its duty in the service of the republican state. The principle embodied in the regulations governing the appointment of officials in all German states, that the official must administer the office entrusted to him in conformity with the constitution and the laws, and must by his conduct in and out of office show himself

worthy of the authority which his office confers on him—this principle places very special duties on the teacher. It is not enough that he should in his teaching merely avoid a disparagement of the existing form of state or of the constitutional government of the Reich and its component states ; but it is also his task to train youth to active participation and responsibility in the service of the state and to awaken and foster its sense of citizenship. It is the duty of the supervising authorities to support the teacher energetically in carrying out this task, but to proceed with all rigour against offending teachers.

To influence scholars from the point of view of party politics, which should in any case never touch the school, is incompatible with the spirit of training in citizenship. To this end scholars must not be members of associations whose tendencies run counter to the training of the school in this respect. School authorities must therefore devote increased attention to school and outside societies of which pupils may become members, and prevent such societies from being formed.

The claims of the new state must be considered in the exterior aspect of the school, the pictures in class rooms and the forms of school celebrations.

The school must succeed in delivering its youth spiritually from the distress of the Fatherland, the political confusion and economic pressure of the times, and in guiding them by means of the lofty traditions of German civilization towards the ideal of a democratic state based on the responsibility of the individual and his devotion to the community.

The duties of the school, fundamentally important even from an economic point of view, demand the active support of all classes of society, especially the substantial help of government and municipal authorities, who should provide adequate funds for the task of reconstructing our nation on the basis of an improved popular education.

The Minister for Education in Prussia has issued regulations for the provision of new handbooks in history. Those which will be selected for use in Prussian schools must so deal with their subject that a better understanding of the present, and a training in republican citizenship, will be attained. Other developments in civilisation besides the political must be treated, and only such events as have had historical consequences. A competition is announced for the preparation of such books, and unpublished manuscripts will be considered.

The Play-Attitude in the Work of Teaching.

By A. G. HUGHES.

MUCH has been written during the past ten years on the educational value of play. In intellectual education we have many reports of the success attending the introduction of "play-ways" of learning. Turning to moral education, we find systems of play-government producing excellent results in the development of the social virtues. The same tendency in physical education has brought about the abolition of the formal drill lesson, and better results are being obtained by the introduction of games and dancing. The recent developments in æsthetic education are further evidence of the far-reaching effects of this twentieth century revival of interest in the educational value of play.

This play movement is not confined to school education. For example, there is much evidence of a growing recognition of the value of the play spirit in industry. The need of making provision for recreative play for the workers has long been realised, but the newer movement seeks to introduce the play spirit even into the dull routine duties of factory life.* Now if it is possible to introduce "a joyous element into the grim region of hard work" in industry, it should surely be an easier problem to introduce joy into the hard work of teaching. Some successes have been reported, as for example, by Mr. W. Platt, in his little book, "The Joy of Education," and by Mr. W. Robb in a recent publication, "The Charm of Teaching Children." There are doubtless many teachers who are daily experiencing the joy and charm of teaching, and the play-ways of learning devised for children have contributed in no small measure to this happy state of affairs. But the fact remains that a knowledge of these play-ways is not always a sufficient guarantee that the whole process of education shall bring joy to the teacher as well as to the learner. One of the dangers attending the introduction of play methods is illustrated by the well-known story of the coster woman who took her family to Hampstead Heath on a Bank Holiday. During the day some childish discord arose and a cloud hovered over the party. Turning to the sorrowful children the harassed mother exclaimed : " Oi brought yer aht to enjy yerselves, and oi'll mike yer enjy yerselves, if oi hez ter brike evri bone i' yer bodies." Truly, as Professor Adams says, " Human nature is amazingly ingenious in finding ways of going wrong." Joy cannot be obtained by threats and orders ; on the contrary, "*ça échappe au commandement.*"† Compulsory joy is as absurd as compulsory freedom, for joy and freedom are intimately connected, being interwoven inextricably in all activities we call play. On the other hand, joy is contagious, so we conclude that it is essential for a true play-way teacher to enjoy his own share in the educative process—the arranging of the children's environments, the wise interference, the necessary guidance, which we call the *work of teaching*. In other words, the two activities, learning by the pupils and teaching by the teacher, should both be permeated by the spirit of play. Real joy in education is the result of the mutual contagion which infects teacher and pupil when each is enjoying his own share of the work. There

* See, for example : Thiselton Mark—Efficiency Ideals.

Helen Marot—The Creative Impulse in Industry.

† See Edmond Holmes : " Give Me the Young"—chapters 2 and 3 on "Compulsory Idealism."

is a sorry picture in a recent novel* of a play-way teacher with a "high, bright, and perpetually interested voice." And when we read, "Poor old Gums, she was one of those who strove to make lessons as good as play," we feel there is something wrong, and we ask ourselves if in the past, discussions on play in education have paid sufficient attention to considerations of the teacher. The present Headmaster of Eton† has suggested that the problem of education is rather like a simultaneous equation in algebra, in which not only the value of " x ," but also the value of " y " has to be considered. It may be well, therefore, to consider the value of " y ," that is, to consider how the play spirit may be introduced into the work of teaching, and to do so, keeping the teacher in the foreground, instead of adopting the more usual method of discussing the play-way mainly from the child's point of view.

The popular idea that play is due to superfluous energy is not a sufficient explanation of all kinds of play, but it is sound in-so-far as it calls attention to the possession of superfluous energy as being a favourable condition for play. The energetics of teaching and the economics of energy are then allied subjects of vital importance to the play-way teacher. Other things being equal, the underpaid or overworked teacher is not likely to find that his work is play. But the subject is largely one of internal economy ; "neither fat incomes nor large leisure have furnished the world with its people of genius." We need to do *for ourselves* what scientific management is trying to do for the manual worker, to eliminate waste of energy by eliminating superfluous and clumsy methods of working. That is to say, joy in teaching will come as a result of mastery in the art of teaching, just as joy and beauty appear when any craftsman obtains mastery over his material. Now what is it that in teaching corresponds to the craftsman's material ? Not many years ago the answer would have been given unhesitatingly, the pupils. The term "*schoolmaster*" still reminds us of that view, and the natural proneness of adults (whether they are conscious of it or not) to domineer over children, explains it. In seeking enjoyment in teaching it is necessary then to guard against mistaking the mere pleasure of domination for real joy. The idea that the pupils are material for the teacher to mould and fashion has been one of the greatest hindrances to joy in education. The view that the material consists of the subject matter to be taught is not satisfactory either, for examples of masterly scholars being miserable teachers are not hard to find. And yet it will be felt that a craftsman teacher should be a master of his subject and, in a sense, of his pupils. The difficulty resolves itself if we look upon his material as being the subject matter viewed in the light of child nature. The mastery then involves not only a thorough knowledge of the subject matter but also an insight into the working of the minds of the pupils dealing with it. This insight seems in some teachers to be "second nature." Such teachers (if they are masters of their subject) are the natural play-teachers who enjoy as they teach, the mastery of their classes being an unobtrusive by-product. They are the teachers who undoubtedly have as a gift of nature the power of developing æsthetic skill.‡

In obtaining the special kind of mastery I have outlined, much help can be obtained in some subjects by a study of the history of those

* G. B. Stern : "The Room," p. 37.

† Rev. C. Alington : "A Schoolmaster's Apology," p. 23.

‡ See Benchara Branford : "Janus and Vesta," chapter 12.

subjects. Here we see inexperienced minds grappling with some of those same difficulties which our pupils now have to face, and without endorsing the extravagant claims made by the exponents of the recapitulation theory, we can safely say that history will often give hints of good method, will warn of pitfalls, and perhaps most important of all, will teach the need for patience with childlike blunders, which are so often a source of irritation and the means of banishing the spirit of play from the classroom.

It still remains to discuss the more usual method of securing the all-important element of the mastery we are seeking. It is obviously a psychological problem. The study of academic psychology by young teachers in training has certainly not produced a body of teachers burning with zeal to continue this study. The recent developments in experimental educational psychology will possibly help to provide a remedy. By giving young teachers an insight into experimental methods, not only will their study of psychology contribute more towards the mastery of their craft than it does at present, but in encouraging and guiding the trying of experiments it will furnish them with a play-method of continuing this study—a play-method which can be used in the ordinary common round of the day's work, and which of itself will do much to raise teaching from "an honest bread-winning occupation" to the level of "a true vocation." The classroom of such a teacher is in a very true sense a psychological laboratory, and all his teaching is a great experiment. Notes of lessons are his proposed plans for experiments, and the results are looked forward to with all the joy of anticipation experienced by a research scientist in his laboratory. The original notes are but a part of the written records ; results of experiments are entered up and new experiments planned in the light of them. And so the work of teaching excites not only his interest but his enthusiasm. Such experimentation is within the scope of all, but to those teachers with scientific aptitude and psychological training further fields are open. The formation of teachers' research committees in education is an encouraging sign that the work of teaching is being more universally recognised as possible research work ; and with more systematic means of making known the results of this research, much waste of energy will be avoided and a consequent gain in efficiency and joy will be achieved.

The character of efficiency-joy depends upon the relative degree of efficiency achieved. It may be only the joy of attainment accompanying the smallest success in a teacher's efforts to obtain mastery of his craft. This joy, as Shand* points out, is very evanescent, soon giving place to new desires. The joy is not complete : perfect mastery has not been achieved, and so a desire for further progress is felt. Under the most favourable conditions it is possible to conceive of a continuous joy of progressive attainment until æsthetic skill has been obtained, when the transitory joys of attainment are superseded by the more permanent joy of perfect efficiency, reminding us of Keats's dictum that a thing of beauty is a joy for ever. But experimentation does not often pursue an even course of progressive attainment. Faraday has told us that "in the most successful instances, not a tenth of the suggestions, the hopes, the wishes, the preliminary conclusions of a scientific investigator have

* A. F. Shand : "The Foundations of Character," p. 511.

been realised.”* Failures and disappointments are bound to occur, and the problem now is how to maintain the attitude of play even in these circumstances.

In the first place it may be good at such times to find a temporary refuge in what Shand has called the joy of retrospect. Looking back, as long as the clumsier methods or the poorer results of former times are remembered, pleasure may still be felt. Freud,† following Spencer and Lipps, asserts that the source of this pleasure lies in the recognition of an economy of energy, citing as an example, the pleasure felt when switching on electric light as long as the complicated arrangements for lighting gas are remembered. The danger of over-indulgence in this joy of retrospect is an obvious one. As a stimulus wisely used, it makes for progress, but it is well to remember Lot’s wife, and as safer methods of maintaining the play-attitude in troublesome times, I suggest the following play-ways.

The first enables us *to face* our disappointments in the spirit of play. It is a sense of humour, a sense which teachers in general are not supposed to possess. We are judged of course by the jokes we tell, and being accustomed to raise a class room laugh very easily, it is not surprising that our jokes, though excellent for their original purpose, when judged from a wider standpoint are decidedly thin.‡ But in this paper we are more concerned with the value of the sense of humour to the teacher himself than to his audience. A man may seldom tell a joke, he may be totally unable to do so, and yet his sense of humour may be so keen that he is continually seeing jokes where others would find only annoyance or despair. He makes his jokes for himself and enjoys them in secret. He gets much quiet fun out of life, even out of its disappointments. Such a sense of humour “goes with us into the most severe and head-wearying and humdrum pursuits, protecting us with its shield of fine amusement against what would otherwise be a continual series of trivial but irritating stings of disappointment. It enables us to be experimental and persistent in our efforts and perceptions. It is a very inward indispensable little shock-absorber—an instinct, as we might call it, for making the best of a bad thing.”§

The second play-way which I suggest is one which enables us *to look beyond* the failures of the present. It is the spirit of make-believe, the source of inspiration of much of the heroic optimism of the world.

“A happy blindness of men to present reality has saved many a good cause in times of trouble, has preserved many a charming way of life, and prevented many a schemer for the world’s good from abandoning his labours in despair. And while it is often good for us to see ourselves as we really are, it may often be still better, both for ourselves and for others, that we are able to ignore our actual weaknesses and pettinesses and to take a make-believe self as the basis of our plans and actions.”||

The operation of these two protective devices of Nature in the life of “the boy who lives in mean streets” has been admirably described

* See Karl Pearson : “The Grammar of Science,” p. 32.

† Sigmund Freud : “Wit and Its Relation to the Unconscious,” pp. 180-196.

‡ See J. Adams : “Herbartian Psychology,” chapter 8.

§ Max Eastman : “The Sense of Humour,” pp. 20-21.

|| T. P. Nunn : “Education—Its Data and First Principles,” p. 88.

by Mr. G. F. Bradby, and if, in spite of all, we sometimes feel that the play-attitude in teaching is merely a dream of theorists, let us learn from "the gay Puck-Ariel of the streets."

"Hunger and poverty, rain and cold, the privations of a cheerless home, and the dark discomforts of an English winter—he triumphs over them all. He is the spirit of fun that lurks in the thoroughfares and frolics in the parks. Give him the least excuse for laughter and he is ready with his jest ; a lamp post, a stone, a bit of wood, and he will improvise a cricket match ; a railing, and he has his gymnasium. He is out to find life good."*

Having followed several suggested means of maintaining the spirit of play in the work of teaching, Mr. Bradby's picture brings us back to the "*x*" of our simultaneous equation problem of education, and we are reminded that the play-attitude in teaching is not only necessary for the sake of the teacher but also for the sake of the pupils, for our attitude towards our work will determine whether our influence will help to strengthen our pupils' natural determination "*to find life good*," or whether it will help them to develop "*the determination to lounge safely through existence*."

Summary.—I have emphasized the fact that the play-attitude is as essential to the teacher teaching as it is to the pupil learning. I have suggested that the key to the development of this attitude lies in the teacher's mastery of his craft. Not only so, but in the very process of obtaining this mastery by experimentation, the work of teaching must to some extent take on the nature of play.

I have also shown the possibilities of maintaining the play-attitude by tracing some of the many ways in which joy in teaching may be achieved. For example, in proportion as a teacher is successful in getting his pupils to learn in the play-way, he shares their joy ; he may experience the joy of discovery which attends successes in his efforts to obtain mastery of his craft : he may experience the joy which attends the consciousness of having achieved some degree of efficiency, and he may, if he has the power to develop æsthetic skill, experience the sublime joy of the artist.

Though all have not the ability to reach this highest stage, it is yet possible for all to transform the work of teaching into a play activity to a greater or less degree, and in enabling them to do so, I have suggested that a sense of humour, a development of the gay, light-hearted playfulness of children, and a spirit of optimism, an expression of the indomitable make-believe spirit which enables children to play in spite of super-human difficulties, are of inestimable value.

* G. F. Bradby : "Ginger and Co.," p. ix.

Gentile and the New Education in Italy.

By A. J. MONAHAN.

It is agreed on all hands that education in Italy stands in urgent need of reform. Since the war attempts of successive Ministries to bring it about have met with no success. The legislative proposals of Croce were bitterly opposed, and failed to become law. In a brief tenure of office his successors, Corbino and then Anile, accomplished nothing. The Fascist march on Rome and the accession to power of Mussolini brought about the appointment to the Ministry of Public Instruction of Giovanni Gentile, a philosopher of European reputation, a teacher of singular power and wide experience, an ardent advocate of the renovation of school and university, seeking the regeneration of his country through a philosophy which is also a faith. Unsparring in criticism, he has been constructive in proposal. In the face of great and constant opposition he has won increasing support for his views, and has been a quickening influence not only in education but in public affairs. First and last, however, to borrow from a tribute paid to him by Croce, "he has lived profoundly the life of the school."

Chief among his fellow-workers is G. Lombardo-Radice, to whose initiative was due the founding in 1919 of the *Fascio di Educazione Nazionale*. Open to all friends of the school, whether teachers or not, and of whatever party, it was intended to keep a watchful eye on the educational life of the country, to promote reforms, and above all, through the press and by intensive propaganda, to prepare for a radical reform of the system of education, inspired by the idealism of Croce and Gentile. The policy of the *Fascio* has been sustained and defended in two journals, *L'Educazione Nazionale*, directed by Lombardo-Radice, and *La nostra scuola*. For some months prior to the Fascist Revolution the latter had opened its columns for the discussion of a proposal that the *Fascio* should throw in its lot with the Fascist party. On the one hand it was asserted that Fascism was a mere negation, barren of ideas, born of disgust, besmirched by violence; that some of its supporters had been among the bitterest enemies of legislative attempts to improve education; that its leaders had never endorsed the programme of the *Fascio*. On the other hand it was contended that the Fascists were intensely national, sworn foes of that bureaucracy and parliamentary intrigue which had rendered all proposals for reform abortive; that by action they were striving to create that new Italy of which idealism is the conscious expression; that it was the duty of the *Fascio* to illumine with ideas their blind pragmatic striving, and from within the party to share their constructive work at least in education. With the appointment of Gentile the problem of the "due Faschi" seemed to be solved by the "logic of events." Until August next the virtual supersession of Parliament provides an opportunity that may not recur. The new Minister of Education scarcely needs the warning "carpe diem" of some of his followers, anxious lest certain alien elements that have been attracted to the Fascist Party should prove its speedy destruction.

Besides numerous articles in the press, a small but growing output of books attests the activity of Gentile's disciples who, for some years, have been busy expounding, defending, applying and developing critically

his ideas. The educational quarterly *Levana*, directed by two of them, has just completed its first year of publication. Gentile's chief works on education are *Sommario di Pedagogia* (2 vols.) and *La Riforma dell' Educazione*, lectures on the philosophy of education delivered to teachers at Trieste. In addition there are several volumes in which his occasional writings on education have been collected. A brief summary, all that can be attempted here, will necessarily do imperfect justice to the doctrine these books contain.

Theory of education is identified with philosophy—not with any and every philosophy, but with philosophy of mind (*spirito*) conceived as pure act. Mind is perpetual becoming, process, life itself which is eternal creation. "Mind in process of becoming is always a determinate, irreplaceable, individual mind,"* and since mind is liberty, education is autonomous development of the individual mind. The apparent duality of educator and educand vanishes in the act of education which is only truly consummated when there is unity of mental process between the two. The centre of the school is the child ; that is, the real child whom all know in family and school—son, brother, scholar. But this real child is distorted and misunderstood if viewed through the analysis of child life presented in the psychology of education so laboriously developed since the days of Herbart. Such psychology is an empirical science, and therefore abstract. In itself, though it may be true and even useful, it cannot enable the educator to penetrate into the mind of the real child. Its place must be taken by a psychology generated within philosophy itself, that is, by a philosophical science which inserts "the mental process commonly understood as childhood into the general activity of mind."† Method, too, is vitiated by a similar abstraction from the real life of mind. Strictly speaking, rules of method are "an analytical exposition of methods already used." They are history ; and history is either living or dead. It is dead when it consists of facts detached from mental process; it is living when the facts are plunged again, as it were, into the actuality of the present. But rules, precepts, technique, alleged to be the stock-in-trade of the Normal School, even if re-lived in the mind of the master, are but a small and negligible portion of his preparation. More important is the deepening and widening of his own culture ; and this means a continual creation and re-creation of himself. Philosophy of mind will give him the right outlook. It will include a general didactic and special didactic. Special didactic will not discuss methods of teaching ; rather it will treat of the nature of the rhythmic movement in which the life of mind consists. Its essential moments, considered as mental forms or categories, are Art (pure subjectivity), Religion and Science (pure objectivity), and Philosophy, their unity and synthesis. Such a didactic, and the philosophy that generates it, is only fruitful "on condition that it is not a book, a piece of information, a cognition, a something to be learned and remembered,"‡ but the activity itself in which reality—that is, mind—is realised until it becomes full knowledge of itself. Is this philosophy powerless in face of the concrete problems of education ? Gentile and his adherents think not ; but constructive work in this direction has barely begun.

* *Sommario di Pedagogia*, Vol. I, p. 115. † *Levana*, Anno I, Num. 1, p. 73.

‡ *Sommario di Pedagogia*, Vol. II, p. 230

At the moment of writing, the actual proposals of Gentile are not to hand. From what he has written it may be inferred that it is his intention to inform the whole system of education with the principles of idealism, and to make changes in organisation with this end in view. The root problem is to provide all grades of schools with masters—that is, with masters capable of fulfilling the high functions which idealism requires of them.[‡] He realises that this is in part a financial question, and would have the material conditions of their existence so improved that their teaching should not be, as it is, depressed by the pressure of economic anxiety; nor should their influence be impaired by a social status unworthy of the service they render to the nation. But since in essence true education is spiritual unity in act of master and pupil, the conclusion is reached that if you solve the problem of the master's own education, you will have gone far to solve the problem of the school. As the master, so the school; as the schools, so the master. If the master is bad, there is a vicious circle. If the master is good, the internal life of the school may be left largely to itself, not needing the ceaseless vigilance of a far flung bureaucracy, and the ends for which a national system of education exists will be secure. On the master in the long run all depends. At present, Gentile has said, elementary education is in great part a pretence; teachers are insufficient in number and defective in quality; an appreciable portion of the population still grows up illiterate. In so far as gaps and deficiencies are due to meagre local resources, the State must furnish ampler means. The lay school has been conceived in the narrow spirit of the French Revolution; it is without a faith, and without a faith no true school can live. Gentile, for whom religion is an essential form of the dialectic of mind, has declared for the disputed doctrine that this indispensable faith should be supplied in the elementary school by the Roman Catholic Church, with a view to satisfying an ineradicable need of the mind which at this stage philosophy cannot meet. Of more immediate interest is his attitude to the Normal Schools. He would sweep away what is now taught under the general head of "Pedagogy"—general theory of education, psychology, didactic, and history, retaining only practice in teaching. The Normal Schools should give a general course of education, differing perhaps in spirit though not in substance, from that of the Middle Schools. In this course, presumably, philosophy would include the philosophical science of education. Further, if the State has done too little for elementary education, for secondary education it has done too much. There are too many secondary (*i.e.* middle) schools. They are thronged by pupils seeking paper qualifications for employment, and so all organic unity is lost. For the majority are quite unfitted to acquire the general culture which these schools are intended to provide. "Secondary instruction is by its nature aristocratic, made for the few and to be imparted to the few."[†] Gentile advocates "few schools, but good." The instrument for securing them will be a rigorous and searching system of state examinations. But he does not believe that there should be a state monopoly of secondary schools. Side by side with the state schools, and in useful rivalry with them, he would permit, and indeed encourage, the existence of private schools. But if this rivalry is to be effective, the State should renounce all privileges for pupils in its

[‡] "Masters" not "teachers," is Gentile's word in this connection. His attitude to women teachers is conservative, and would need fuller explanation.

[†] *Il Problema scolastico del dopoguerra*, p. 104.

own schools, "submitting all candidates, public or private, to the same examination, on the same programmes, and before judges who have not been their masters."* Purge the secondary schools, and then the universities will be accessible only to a carefully selected aristocracy of intellect. From this aristocracy the schools would receive again masters who would infuse into them new life, but only if the universities are themselves reformed. At present there are too many of them, too many chairs, and not enough men competent to fill them. By concentration of resources, grouping and specialisation, greater rigour in making appointments, it is hoped that the universities will become more vigorous and flourishing centres of learning and research.

* *Ibid.*, p. 107.

The Individual and the Environment :

By J. E. Adamson, M.A., D.Lit., Director of Education. Transvaal Province. (Pp. x+378.) Longmans. Price 14s.

THE author of this important book has the cultured Scotsman's way of looking at the world largely through the eyes of the philosophers and the more philosophical poets. But he also bears the chief responsibility for administering education in one of the youngest provinces of the Empire, a task which must bristle with interesting and intricate problems. These complementary qualifications have enabled him to treat educational theory upon a philosophical basis without ever losing touch with the actual work and conditions of the school, and to produce a book which will retain the attention and respect of readers who are apt to shy and become suspicious directly the names of Kant and Bergson are introduced into a pedagogical discussion.

The central idea of Dr. Adamson's theory is that education should aim at the development of the individual through adjustment to the world. The phrase does not mean that the individual is here, the world there, and that the two are to be brought into fruitful contact. Following the idealists, he takes the individual and his world to be one. Adjustment is then a "double-edged process" within the unity of experience in which "the individual wrestles with his environment and, while he appropriates it, also contributes to it, leaving it, it may be hoped, better than he found it." And his "individuality," which is based upon the peculiarities of his physical and mental endowment, is the "unique colour" which the world takes on for each experient in the course of adjustment.

Looking at education from this standpoint, Dr. Adamson is led to challenge Professor Adams's conception of it as a bi-polar process in which educator and educand occupy the poles. When the teacher comes into the business at all, it is (he argues) as a third and definitely subsidiary pole. Or rather, it should be so; for the teacher's standing temptation is to magnify his office in such a way as to hinder instead of facilitating the adjustment between the subject and his world. This reveals Dr. Adamson as a whole-hearted though sober friend of the modern tendency in education, but is not quite fair to Professor Adams's argument. Professor Adams's contention is that education, in the usual sense of the word, always involves a teacher and a taught, even though the two may become (as they should become) the same person. It is not merely a debating point, but one of substantial importance; for it means that fruitful learning must always be guided by principles consciously held, that is by "discipline" offered from without or self-imposed.

The world, the object of adjustment, is the whole of reality as envisaged from the subject's standpoint. It is convenient to analyse it into the three worlds of nature, civilisation, and morality; but these are only aspects of unified reality, just as to the disciples of Minkowski and Einstein space and time are but aspects of the unity space-time. Adjustment is, however, to be understood differently in regard to the several subordinate worlds; the experient explores nature and discovers civilisation, but creates the world of morality. These distinctions offer

a useful basis for a classification of school activities and for criteria of teaching methods. Thus nature study (including geography) and science belong to the exploration of nature ; the discovery of civilisation involves a study of the school as a social microcosm and of its relations to the Great Society, together with a consideration of history, language and literature as instruments of social adjustment ; while in connexion with the creation of the moral world the possibilities and methods of moral and religious instruction necessarily come up for review.

It is not possible in a brief space even to summarise the excellent discussions Dr. Adamson gives under the three main heads of his treatise. It must suffice to say that he deals with the subjects of the curriculum in a broad and useful way, and shows how they may be taught so as to deserve inclusion, one and all, under the noble name "humanities;" and also that the philosophic temper of his treatment does not prevent him from being "practical" to the point of illustrating his views by quoting some interesting syllabuses in use in Transvaal schools. Only a few points of special interest can be referred to specifically.

Though geography is taken as belonging to the exploration of nature, Dr. Adamson brings it into a rather closer connexion with history than some of our reformers would approve of. In harmony with this attitude he argues for "comparative" geography based on the familiar political units before the regional geography which studies natural units. It should also be noted that he would re-establish physiography, much as Huxley conceived it, as the "real introduction to science." In adopting this view he will find a good deal of sympathy among teachers who are dissatisfied with the present condition of science teaching. His chapter on science in the narrower sense is particularly good, and brings out in a striking way the value of his constant practice of confronting school policy with philosophical principles and psychological analysis. He writes wisely and moderately about the much vexed question of the "heuristic method," and sides with recent critics in claiming a substantial place for the biological sciences in the secondary curriculum.

The second part of the book ("The World of Civilisation") begins with chapters which are, in effect, brief tracts upon social, political, and economic philosophy, pleasantly written and concretely illustrated, and likely to whet a good student's appetite for more. On the vital question of the relation between the individual and the (so-called) social organism, he takes up a position which seems to do justice to all the factors involved. For while emphatic that "the social self is part of the texture of the individual self" he recognises that it is a part of immense significance and value.

Among the more practical discussions in this part of the work the most important is, perhaps, the one devoted to vocational adjustment. Here Dr. Adamson argues on strong grounds for a bold acceptance of the vocational claim in secondary education. While all education should be liberal in spirit and all secondary courses must contain a large common element, there should, he maintains, be a differentiation of secondary schools into a "humanistic type," whose pupils are to be prepared for the church, the profession of letters, the law, economics and politics ; a

"nature type" which looks towards agriculture, engineering and medicine; and a "crafts and commerce type." The whole of this argument deserves serious attention.

Coming to the last section of his work, Dr. Adamson feels that he has to defend the separation he makes between the world of civilisation and the world of morality, and also the idea of creation as applied to the latter. His defence is, in brief, that the worlds of nature and society press upon the experient and imperatively demand adjustment, while morality is the sphere of the Kantian freedom which he may enter or not almost as he wills. There is room for differences of opinion here; it is arguable, for instance, that the world of morality awaits "exploration" by the experimenter in life as definitely as the world of nature. But there is likely to be general agreement that Dr. Adamson has treated the all important problems of moral and religious instruction with characteristic usefulness and breadth of view.

T. P. NUNN.

Education on the Dalton Plan.

By Helen Parkhurst, with an Introduction by T. P. Nunn, M.A., D.Sc., and Contributions by Rosa Bassett, M.B.E., B.A., and John Eades. (G. Bell and Sons, Ltd., pp. 214, 4s. 6d. net.)

THE Dalton Plan and the experiments based upon it have already attracted so much attention in this country that teachers and students of education will heartily welcome this book by the originator of the plan.

The book breathes the enthusiasm without which such a courageous experiment could never have been attempted, and at the same time there is more moderation in tone and more awareness of possible weaknesses in method than one is accustomed to find in the writings of pioneers of new methods, though even Miss Parkhurst's language sometimes suggests a smoothness of working and an absence of the *possibility* of "wasting of time" which one finds it hard to understand.

Miss Parkhurst begins with an account of the origin of the plan and a brilliant exposition of the fundamental principles on which it is based, viz., Freedom and Co-operation—the latter too often lost sight of in popular accounts of the scheme.

The freedom, however, is definitely limited, and in several ways. There is no unrestricted choice of subjects. The programme is mapped out for a given period for each pupil and contains a balance of studies. The freedom consists in the fact that the pupil can choose what he will do at a given time and how long he will continue at that particular subject provided that he covers a given portion within a given period—a week or a month. Such freedom of choice demands an entire re-organisation of the class system. Rooms are allocated to the respective subjects and the teacher dealing with a given subject, say Geography, remains in that room. Pupils who wish to do Geography at a given time go to the Geography Room (unless it is full), so that they have apparatus, books and teacher at hand.

There is further freedom in that, if a pupil has covered his prescribed assignment in all subjects, he can spend his extra time in further work on whichever of them he chooses. Insuperable difficulties are taken up, as they occur, to the teacher or are discussed with fellow pupils at a similar stage.

Probably the main advantage of this method is that it allows a pupil to work at the speed which suits him best. However carefully classes are graded there must still remain enormous individual variations. Under the class system of collective teaching the slow worker in arithmetic has to be hurried along at a pace which suits the pupil of average arithmetical ability, and often he has to leave a topic when he is just beginning to get the right notion, which may be lost entirely. Hence we are not surprised to find in a recent report of an experiment on the Dalton Plan that one girl who had been rejected in examinations in arithmetic time after time got over 90 per cent. in the examination following a year on the Dalton Scheme. Another independent report on work in Hull states that the plan "is better with slow children and with the intellectually stronger."

There is no advocacy of the abandonment of all class teaching. Groups can be gathered together for a collective lesson at appropriate stages and regular class lessons are given for certain subjects. Miss Parkhurst recommends the introduction of the plan with selected (major) subjects at first, and she rightly warns the teacher that a method is not to be fairly judged by the immediate results. "It takes time to counteract the habit of dependence bred in the pupil by constantly telling him what to do, when and how to do it." It is evident that the starting of an experiment on Dalton lines will be harder than the carrying of it on after an initial period. The planning of the assignments will obviously be a matter of great difficulty, and they will need constant adjustment with further experience. Herein partly lies the solution of the puzzle—how can adequate individual instruction be given in the same time as collective instruction? The planning of the scheme will be done outside teaching hours. The critic's suggestion that the Dalton Scheme is one to suit lazy teachers is utterly wide of the mark. The teacher will probably be even harder worked, especially for the first year or two.

The volume includes an admirable chapter on "A Year's Experiment in an English Secondary School" by Miss Rosa Bassett (Head Mistress of the County Secondary School for Girls, Streatham), who reveals marked critical ability, which she turns upon the experiment in her own school. Miss Bassett courageously publishes reports of her pupils on the method, and states that "There is no doubt girls like working together if they are fairly even and a weak girl likes to have help from a stronger one, but many state that the weak rely too much upon the strong." Suggestive comments are "I need never pass over a thing which I do not understand." "The knowledge gained is not so stodgy." "I take more interest in the books I am reading now because there is variety, and we do not now have just to read from one or two books during the term. For History, instead of the whole class getting the same idea on a subject, everyone tackles the subject from a different point of view." "It takes longer to gather from books that which can be gathered from mistresses." "One of the disadvantages is that a girl is tempted to leave the subjects she dislikes and to work only at those she is fond of. This was avoided when we had to attend three or four lessons in a subject in a week." "For girls who cannot concentrate it is far more difficult to get information from a book than from someone who can make the subject interesting and give information away from dry facts." "In learning from books many people cannot pick out the most important facts, but make twice as much work by learning trivial points of no real value."

But Miss Bassett wisely sums up: "Under any system the heedless child who neglects her work may get worried and flustered at the end of the term. Now we find fewer who neglect their work and fewer who are worried over it." In particular she claims a great advantage for the system in the case of the shy, self-conscious child. "She is in closer contact with the teacher; she realises that she is not taking up the time of the class in her efforts to express herself." "Correction of speech defects is received in a far more kindly spirit when the child is by the teacher's side, and possibilities for correction are more frequent. Now oral composition has become a valuable exercise."

A chapter revealing personal insight, if somewhat weak psychology, is contributed by Mr. John Eades, Head Master of Kirkstall Road School, Leeds, with a specimen month's assignments. The volume is prefaced by an introduction by Professor Nunn with characteristic breadth of treatment and generous appreciation of fellow workers in the fight for greater elasticity in our educational system.

There is little doubt that on psychological grounds the Dalton Scheme is admirable. From the ethical point of view it can hardly be disputed that it is better for a child to aim at the mastery of so much subject matter than at beating his fellows, though some element of competition can be retained under the Dalton Scheme if desired. The problem as to the wide utility of the plan turns on the question as to how far the assignments can be wisely planned, the extent to which text-books suitable for individual work can be supplied, and the degree to which teachers can adapt themselves to, and stand the strain of the continuous individual work.

Only experiment on a large scale can determine the general utility of the plan. In this, as in other schemes, the variation of individuality in the teachers will doubtless lead to success in one place and failure in another. In the meantime we give our unstinted admiration to those who have had courage to attempt so revolutionary a change, facing the danger of severe criticism in case of even partial failure, and one may hope at least that it will stimulate the extension of individual work even within the existing system, a movement which of course had recently increased very appreciably before the Dalton Scheme or Montessori Methods were heard of.

C. W. VALENTINE.

The Education and Training of Teachers :

Edited for the Advisory Committee on Education of the Trades Union Congress and the Labour Party by G. S. M. Ellis. By post 7½d.
32, Eccleston Square, London, S.W.1.

It is cheering in these discouraging days to find a responsible body of people, other than teachers, convinced of the paramount importance of an educated and trained teaching profession, and convinced, moreover, to the point of publishing a well considered statement of their views.

The recruiting of teachers, their school, and post-school education, and their professional training are all reviewed. For recruitment the Advisory Committee would rely on the intrinsic attraction of a profession, in which the pay, the status, and the conditions of work, are made worthy of the ends for which it exists. They would ask no young person to make definite choice of his life-work before the age of eighteen, nor would they prejudice in any way the prospects of those who wish to postpone decision till a later date. Besides the best general education possible, they would insist also on a course of professional training. With the present situation they would deal with a masterly hand ; the employment of new supplementary teachers would be prohibited, un-certificated teachers would be given opportunity to become fully qualified, and untrained teachers would be offered courses of training.

To this point, to quote the pamphlet, "the suggestions made are non-controversial," those which follow, and which deal with the re-organisation of existing systems of training, require more detailed consideration. Many problems connected with the training of teachers can only be successfully handled when we are clear whether we are dealing with the training of men or of women, or when we know whether the future work of the teacher will lie mainly with older or with younger children. True, there is a fundamental unity in teaching which overrides these differences, yet this pamphlet loses not a little in suggestiveness and clearness by a failure to recognise that the problems it discusses take on a different aspect according to the angle from which they are viewed. The teaching of children under ten or eleven is passing more and more into the hands of women. They have always staffed the infant and kindergarten schools, and since the beginning of the war they have been increasingly employed in boys' preparatory schools and in the lower classes of boys' elementary schools. Thus the training of teachers for younger children is very largely the training of women, while approximately equal numbers of men and women teachers are needed for older children.

The Training College system is first reviewed, and many arguments are adduced against it. "Elaborate codes of rules," "frequent roll calls," "repressive and foolish discipline" are alleged, and if these things exist, they ought to be pilloried. Such evils can be and must be removed, for, as the writer wisely observes, community life, which may be the richest of experiences for young people, can also be a blighting influence if ill directed and narrowly conceived. These evils are not of the essence of the system, but the "segregation" of intending teachers in one community is of the essence of the system, and this is deplored. What is the remedy ? To transfer them to the Universities ? If we take the figures in the pamphlet, there were over 10,000 students in the

Training Colleges (other than University Departments) in 1920-1921. Considerably more than half these would be women, say 6,000. Surely this number is roughly comparable to the total number of women students in the Universities, many of whom are already in the Training Departments, or intend to teach. We might then swamp the Universities with teachers, but can we, so far as the women are concerned, really solve the problem of segregation? Even if we increase the number of Universities, and of the women students, we are still hoping to increase the number of teachers, and the relative proportions might remain much the same. Does not the root of the difficulty lie in the number of women teachers that the nation requires? Can we ever produce the number of students destined for other courses required to dilute them sufficiently? The situation is improved when we consider the men, but recent years have been abnormal, and we cannot use the figures in the same way. In any case, although there is free intercourse between the men and the women students, the respective Unions are what really count in the social life, and these are separate.

We need not, however, despair. There is another side to the "segregation" involved in the Training College course. It often is, and it can be, tempered by the mixture of types and ideas found in a resident College which draws its students from all parts of the British Isles. The resulting ferment is often more real than that produced among young people of the same district who yet look forward to different careers. Moreover, it is an inseparable feature of any system of vocational training, and though the writer does not seem to regard such a system with favour, he would doubtless agree that it has certain virtues of its own. Vocational education is to be deplored, if it begins too early in life, and if the vocation is conceived on too narrow and technical lines to bear the weight of a generous and humane education, but purged of these evils, it can give to those who enjoy it a purpose in life and a practical outlook on their knowledge, which is sometimes wanting in those whose education has not so plainly shown them the relation between livelihood and life. At present—possibly it will always be so—many young women who leave school at eighteen desiring to teach, do not desire to learn with the same ardour. They are not "students" in the specialised sense of the term, and before they care to study "the arts and the sciences and the ever-broadening influence of the human mind" they must discover that such study is related to their future work. That it must be so may be a commonplace, but it is not one universally grasped in advance by those who wish to teach young children. Many students, apparently indifferent to the things of the mind, will Antæus like, spring to life through contact with the school and the children, but they need this contact with their future work before they find a purpose in their own study. These phenomena may be rare among men, but they are common among women, especially among those who wish to teach the younger children. When the Froebel Society planned a Course of Training for the teachers in the new kindergartens some thirty or forty years ago, they too planned a vocational course, professional training and higher education concurrent. The needs of those who will teach older children are different. In the earliest stages the child is everything, the subject very little, but as the child develops—although he is still the centre of interest—the lines of division between the subject he studies become firmer, and the specialist teacher, deeply interested in one branch of

knowledge rather than in the introduction to all branches, becomes needed. It is essential that the teacher of the older child should possess the type of mind that, in his student days, perceives the love of knowledge for its own sake ; the love of children may safely come a little later to him. His intellectual grasp of the relation between his own knowledge and his capacity as a teacher should be enough. His professional training should wait until his own higher education has reached a Degree standard. To ask him to teach concurrently with his study is to " distract him," " to divide his interest and to waste his effort." It is not, however, " equally absurd " to offer to students of a different mind and disposition a concurrent course of training and higher education (vocational education in short), one which appears at any rate to meet the needs of large numbers of women. The great importance of the early years in education is alluded to in the pamphlet, but there is no recognition of the need of specialised training for the work, and it is certainly arguable whether teachers trained on the lines advocated would be as successful in the infant and junior schools as are the teachers trained on the present lines.

We do not thus agree with the pamphlet in regarding the Training College as a " second-rate compromise " for the University, but conceive of it as an entirely different thing. The Training College has its own genius and its own purpose, and these are neither better nor worse than those of the the University, but different. Reformation is certainly necessary, but if the Training Colleges were superseded it might easily happen that the result would be distasteful and disappointing, for a " Prussian uniformity is the last thing we wish to see." Variety is the very breath of life in education, and where two utterly different systems of training teachers already exist, the very greatest care should be exercised before any encouragement is given to the assimilation of the one to the other. The Scottish system is sympathetically mentioned, and it is assumed that " the training of our teachers " should be " more generally of the type which obtains in Scotland," and that " we lag behind our northern neighbours." But from what point of view has the writer studied the Scottish system ? Has he followed up its results in the schools, or is he attracted by its outward symmetry and the predominance of the University ideal ?

The pamphlet clearly shows that if all teachers are to take a University Degree, there must be besides the existing Faculties a " New Faculty," one not specialist in character, and that within its range must come the " appreciation and practice of Music and of Art." Such a Faculty would present so new a departure in University education that it is difficult to say whether it could find congenial soil on which to grow and to flourish. It might become a waste-paper basket. The course suggested would hardly attract the most intellectual, and by what means is it to command the respect which the new Faculties of " Modern Languages and of Technology have won ? " It is not possible here to discuss fully so large and important an issue as the relations between Universities and Training Colleges. The history of the training of teachers up to the present day does not entirely bear out the assumption of the pamphlet that all the advantages are with the University and the disadvantages with the Training Colleges. While the University stands for the advancement of knowledge, the training department aims at making teachers, and this divergence does not make for a congenial atmosphere.

What is urgently needed is the scientific study of education in the Universities, and until this is better endowed and encouraged all systems of training must lack vitality and conviction. There is now general agreement that every Training College should be in living contact with a University, and throughout the country schemes are under discussion or are actually being tried to achieve this end. The suggestion of a Central Joint Board to control training is also one that finds acceptance, and a central control of a representative nature is urgently needed in these times of educational vicissitude.

It is regrettable that the Arts and Crafts have only the limited and cursory mention which is given them in connection with the proposal for a new University Faculty. Probably they are of greater educative value to the average child than the literary and scientific subjects. How is this to be recognised? Possibly a University course in certain subjects might be combined with concurrent courses at Schools of Music and of the Arts and Crafts, but "to assemble the parts" (in Mr. Maxwell Garnett's phrase) of separate courses of study at different centres into a living whole, realised as educative and inspiring, is a task beyond the powers of a large number of students. A system, however good its intentions, which somehow fails to educate and to inspire will not give the teachers we want. Of late years the Training Colleges have proved that they can offer a congenial soil for the cultivation of the Arts and Crafts, and this is well, as there is no doubt about the immense importance of the aesthetic and the practical training of younger children.

For the professional training of the student after his University career, the University Training Department is advocated, or the development of selected schools, specially staffed and working in conjunction with the Universities. Valuable work in training has been done in selected schools, and the system might well be further extended, though large numbers of schools could hardly be found to undertake it. A particular School Training Centre could not accommodate large numbers; thus the system must remain subsidiary to other training systems. Students would probably wish to be attached to schools in their home areas, and there would be a danger of parochialism, as they would very likely have been educated in this area and remain there as teachers after their training.

The basic principles on which all the detailed proposals of the pamphlet rest—that the training of teachers should be a national concern, and that none but fully qualified and trained teachers should be employed—are exactly those principles which are now being attacked. The change in the payment of grants to the Training Colleges founded by Local Education Authorities is forcing them to become localised and parochial, and the necessity for the reduction in the total number of teachers has been so met so as actually to increase the number of totally unqualified persons: a veritable landslide in the standard of appointing bodies throughout the country has set in since last March. The situation requires most careful watching within Parliament and without, and we appeal to the Advisory Committee to remember, that although they may not approve all parts of the existing system, yet if it is further impoverished and its efficiency impaired, it will be far more difficult in the future to make those advances for which they hope and plan. True education grows slowly, and from deep roots.

WINIFRED MERCIER.

Book Reviews.

A Study of Modern Educational Theory and Its Applications. By Nancy Catty, M.A., Lecturer in Education, Goldsmiths' College, University of London. (Sidgwick and Jackson. Price 3s. net.)

Miss Catty has produced a book which, by its freshness of outlook and clearness of expression, is likely to recommend itself to those who wish to know something of modern views of education.

Miss Catty makes plain in the introduction what she takes to be the aim of education, and this aim is never lost sight of in the chapters which follow. The aim of education, she suggests, may with sufficient exactness be defined as the making of "the best possible citizens of the best possible city," and since the present-day interpretation of the best possible citizen is a man (or woman) who will hold himself responsible for his own work, the business of present-day education is to produce such people; accordingly the modern school lays far more stress on the importance of thinking and acting for oneself than on the submission to authority so admired by a past generation. Education, however, in order to realize its aim, must take into account the physical and mental characteristics of children, and so it will neglect neither hygienic considerations, nor the revolutionary work of the modern psychologist.

It is impossible in the course of a short review to do more than merely indicate in barest outline the scope of the book.

Having assured us that she is building on only such work of modern psychologists as has been fairly substantiated, Miss Catty devotes her opening chapter to a brief discussion of the child's heritage of reflex and instinctive action, and shows how teachers may use their knowledge of this innate equipment to secure the controls of conduct they desire.

A useful discussion of habit in Chapter II is followed by an excellent account of emotional development in Chapter III. Miss Catty traces the development of sentiments and secondary interests from the inborn emotional bases, and shows their power as springs of conduct. She urges the necessity of giving children time in school to pursue and develop these secondary interests, which include love of the intellectual and artistic sides of life.

Of the remaining chapters of Part I Chapter IV deals with the "Making and Function of Thought"; Chapter V with "Imaginative Conduct"; and Chapter VI with "Good Will in the Making." Chapters IV and VI emphasise the importance of allowing children to think for themselves both in intellectual and practical matters, while Chapter VI stresses the necessity for training in social life and consideration for others.

In Part II there are three chapters named respectively "The School as a Training Ground," "The School Curriculum," and "The Syllabus and the Time Table." Miss Catty urges that preparation for the life of a wider community involves the necessity of the children feeling that each and every person in the school, member of staff, prefect, or child, is a real member of that smaller community, and that though all differ individually, each contributes his part to the general good. Staffs should not be so "over-efficient" as to leave no scope for the children's organising and initiating activities.

Two appendices complete the book, one by Miss P. Chart, giving a curriculum for a rural school; and one by Miss M. Palmer, giving a scheme for independent work for girls of the "Literary Division" of standards VI and VII of the Childeric Road (L.C.C.) Demonstration School, New Cross.

It is a pleasure to read a book so modern in outlook and so full of helpful suggestions. One feels how sound is Miss Catty's point of view, and that the child is central in her thought. Of what Miss Catty says I have no complaint to make, but my one regret is that she has not said a great deal more. Useful as the book is, I feel its value would have been doubled, even as an introductory book, had it been longer and more detailed. The applications of psychology that Miss Catty makes are for the most part quite general, for she feels it should be left to the specialist teacher to say what particular applications should be made in her own special subject. But it seems to me that at least a few such applications might have been mentioned with profit by way of illustration, for this is precisely where students, and others probably, find the greatest difficulty, and where a few typical illustrations would have been so helpful.

Nevertheless, the book is one of real merit, and deserves to be known by training-college students and anyone interested in education.

ELISABETH SCOTT.

Sigmund Freud : Introductory Lectures on Psycho-Analysis. Translated by Joan Riviere, with a preface by Ernest Jones, M.D. (George Allen and Unwin, pp. 395, 21s.)

C. Baudouin : Studies in Psycho-Analysis, Translated by Eden and Aden Paul (George Allen and Unwin, pp. 352, 12s. 6d.).

The first of these volumes is divided into three parts, the first dealing with the psychology of error, the second with dreams, and the third, the longest and most important, with the "General Theory of the Neurosis." Freud here reveals certain interesting developments in his own views, and no student of the new psychology of the unconscious can afford to neglect this book. It reveals that Freud has thought out his theories more completely, and in particular has strengthened the links—still too few and too weak, however—between his psychology of the unconscious and the generally accepted body of psychological thought. He has also become alert to criticisms; he recognises the reasonableness of many of these, and deals with them frequently. He admits more frankly the limitations and even the dangers of psycho-analysis. At the early stages it could not be known, he says, that psycho-analysis is of no use in delusions and dementia *præcox*. He admits that some cases of cures are not old enough for us to judge as to their permanency, and finally he points out the dangers of the "transference" of feeling (on to the analyser) being handled by an unscrupulous physician.

There is no change, however, in the excessive emphasis Freud lays on the factor of sex in mental development and mental disturbance. He still labours, as it seems to me, under the logical fallacy of maintaining that because certain mental elements (a, b, c) are found in conjunction with sex instinct proper (x), that, therefore, a, b, and c can be identified with x, and hence that a or b can be labelled x even when they are found alone.

One point of special interest brought out clearly in the lectures relates to the comparison between the normal and the abnormal person. Freud emphasises the fact that there is no hard and fast distinction between the two, and that there may be much more repression in a normal individual than in many abnormals. Mental health and sanity are dependent, says Freud, on the relative amount of free energy available after the required amount has been withdrawn in the work of repression.

A second point of special interest is Freud's discussion of suggestion. He regards (p. 375) the transference of feeling to the analyser as a special type of suggestion, and thus holds that in this sense (not a happy one, as it seems to me) suggestion is the essential basis of psycho-analytic cures. But that direct suggestion is the real cause of the cure he emphatically denies. Suggestion is only used to help the patient in the overcoming of the inner resistance. The physician has, indeed, to aim especially at avoiding a too ready, and temporary, cure, by suggestion.

This view of the place of suggestion leads us naturally to Baudouin's book, to which one turns with interest, to see the view on psycho-analysis of the exponent of Coué's method of auto-suggestion.

Part I (about one-third of the book) contains an excellent, clear, and critical study of psycho-analysis and its relation to the method of suggestion. This introduction, however, assumes some previous knowledge of the subject. Baudouin argues cogently for the possibility of blending two methods—indeed, he shows, as Freud admits, that it is very difficult to prevent suggestion entering into psycho-analysis. He protests against the too great unifying of instinctive forces (e.g., sex, in the case of Freud, the instinct for power and self-assertion in Adler's system). He emphasises the fact that many instincts are involved, and his discussion of the affective theory of association is of interest not only to psychologists but to creative artists of all types. Being aware of the strong antipathy of French thinkers to Freud (the *Traumdeutung* is not yet translated into French) he skilfully leads up to his position via the line of French psychologists, and indicates that Pierre Janet is more friendly to-day to psycho-analysis, after being very distrustful. Baudouin (p. 32) attempts to interpret the abnormal in terms of the normal, while holding that the abnormal also helps us to understand the normal. He suggests that there is a danger of modern psychology becoming obsessed with the abnormal as the classical psychology was with the most intellectual type of normal.

The second and larger part of the book is given to the analysis of individual cases. In my opinion this part is much inferior to the theoretical discussion. Baudouin here seems to lose some of his critical balance, and either to become credulous and imaginative or to give inadequate details to convince his reader.

C. W. V.

An Introduction to the Psychology of Education. James Drever. (Edward Arnold and Co.)

This book is an excellent introduction to the study of the psychological bases of the educative process for those who have some knowledge of general psychology and are familiar with the work of some of the leading modern psychologists. But, bearing in mind the statement in the Editor's Preface that the needs of young teachers and of those training to be teachers have been kept in view, we are not convinced that such students are prepared for an analytical survey of the views of three or four writers on controversial topics, as, though it is desirable to show in an introduction that there is not complete unanimity of opinion on many points, it is, we believe, more important that the beginner should not be overwhelmed by the weight of arguments directed against writers with whose views the novice or student in training can scarcely be expected to be familiar. On the other hand it is doubtful if the beginner can follow the reference early in the book to faculty psychology as a discredited theory.

An interesting example of falling into a pit which one has oneself pointed out to others occurs in connection with memory on page 28, and the author's treatment of imitation as a general instinctive tendency suggests that he has not escaped entirely from the meshes of faculty psychology. Surely no individual has a tendency to imitate any and every action he perceives performed around him, and if only some actions are imitated then other factors besides a general imitative tendency are involved and it is misleading to say that they are due to a general imitative tendency.

In spite of the many excellencies of this book, of which we may note the breaking away from the traditional method and order of treatment and the chapters on the Dynamic of Personality and on Capacities, we were left dissatisfied after reading it. This dissatisfaction appears to be due to the absence of discussions on certain topics that are of considerable educational importance; the discussion on pages 205 and 206 scarcely give the student the guidance he requires in solving the problem as to how complete organisation on the intellectual side is brought about; there is little about education for enjoyment unless the account of the "Pleasure Principle" summarises the author's views on this topic, and if so, then a statement on page 128 seems to beg the question, since one of the normally important interests in a well regulated life appears to be enjoyment, and no grounds are given for the statement that acquired appetites are serious in proportion as they displace interests which are normally important in a well-regulated life. Perhaps any attempt to value interests on purely psychological grounds is doomed to failure, and we have here an expression of the author's outlook on life. Further, the space devoted to social psychology and to a discussion of the ways in which different forms of social organisation among children affect and are affected by their mental constitution is unduly small.

These omissions would perhaps not have been noted if the author had not deliberately chosen to write a general introduction to the whole subject rather than a detailed treatment of only a part. (Introduction.)

The book is one which we believe would have been more valuable had it not been used by the author to serve two purposes, to be a contribution to the psychology of education and to be an introduction to that study. The author has set a high standard in respect of careful analysis of the psychological bases on which education must develop, and we can only hope that ere long we shall have an equally thorough account of the various processes by which each individual is continuously educated.

A. E. CHAPMAN.

Bergson and Education. By Olive A. Wheeler, D.Sc. (Longmans, Green & Co.)
The aim of this book is to make explicit and to criticise, by the light of Bergson's philosophy, "the principles involved in recent educational developments." The author claims that Bergson's philosophy is "the one philosophy that most adequately reflects the spirit of the age," and that by it the "progressive movements" in education to-day may be "related and unified."

Clearly for the author "progress" in educational thought is to be gauged by the degree to which it approximates to the Bergsonian philosophy of life.

Dr. Wheeler, in the first section of her book, gives an admirably lucid exposition of Bergson's thought; consistently with her intention, stated in the Introduction, she attempts no criticism. She passes, carrying her reader with her on the wave of her own enthusiasm, to the second section, in which she attempts to gauge, by the help of Bergson's philosophy, the value of certain "new ideals" in education.

Every attempt to bring home to the world in general that education for life must inevitably be based on a philosophy of life should be encouraged—our thanks

are due to the author for this attempt. We recommend teachers to read the book on one condition, and that an important one, that they also study Bergson's philosophy and supply the criticism which the author, unfortunately in our opinion, has omitted.

Each reader should satisfy himself on the following questions :—Is the author justified in her claim that Bergson's philosophy is "the one philosophy that reflects the spirit of the age"? What about, for instance, the philosophy of realism, or the philosophy of idealism? It is true that adherents of both systems claim some kinship with Bergson, but there are important differences. Are we wise, since no philosophy claims to have found the whole truth, to adopt one system by which to gauge the rightness of our educational thought? Is it not safer in the cause of truth to allow contrary tendencies to exist in our educational movements, to make no attempt, as yet, to unify, seeing that a unified theory, if a false one, would bring loss to the future generation?

Bergson exalts intuition over intelligence, but may it not after all be true that the rational principle is the distinguishing element in man, and if so may not the "revolt against intellectualism" need curbing rather than emphasising?

In the second section of her book Dr. Wheeler examines certain of the problems that engage the school world to-day. Her chapters on "Freedom," "School Government," "The Curriculum," "Methods of Teaching," show her to be possessed not only of a sympathetic understanding of the underlying aims of these movements, but of a capacity to appreciate both their strength and their weakness. In her hands the revolt against intellectualism will not be carried too far—indeed, as she points out, the adoption of Bergson's philosophy does not necessarily lead in this direction, but there always remains the danger from "foolish disciples."

Dr. Wheeler cares greatly for her subject. She has the power to impart some of her own inspiration to her readers.

M. HAMMOND.

British Journal of Psychology, Vol. XII, Part 4, April, 1922.

E. C. Oakden and Mary Sturt in "The Development of the Knowledge of Time in Children" give an account of tests applied to school children to discover their understanding at different ages of the significance of dates, the characteristics of periods, and various phrases indicating time. A great improvement was noted about the age of eleven. The children found it difficult to arrange dates correctly, and apparently attached little importance to them in their connection with great historical characters under their proper dates. When required to date an epoch they prefer to give the name of some famous contemporary character. As to the placing of historical epochs: those which are most remote from our own time are most readily distinguished. This seems to be due to the fact that the earliest distinction is between the present and a past, which is mainly negative. In this "past" sub-divisions are at first ignored: they are only attended to after the age of about eleven years. It is inferred that in the teaching of history more detailed descriptions of characteristics of various periods should be given. Otto Lipmann in "The School in the Service of Vocational Study" discusses the value and methods of estimating at school age the psychological endowment of the pupils. He distinguishes under "endowment," capacities and interests, and the material and formal aspects of endowments, and he emphasises the difficulty of estimating at school age the permanent interest in the material concrete details of an occupation. He questions the correlation of ability and "willingness to use ability," and maintains that interest especially is liable to change. The judgment of the children themselves as to the occupation they would like is especially unreliable, because influenced by the attraction of objects and material with which they would have to deal rather than the nature of the work they would have to carry out.

The writer refers to the value for higher occupations of general intelligence as compared with specific abilities, and the possibility of compensating by greater general intelligence for lack of specific abilities or perhaps by substitution of one type of work for another.

He suggests that the teacher should not give advice as to occupation, but only supply information to expert vocational advisers who would also consider the economic aspect of the question. His experience at the Institut für angewandte Psychologie, Berlin, makes the author sceptical as regards the diagnostic and prognostic value of single experiments unsupported by school observations, combined with which, however, they may be of great value.

Herr Lipmann suggests, further, that the school might also afford instruction, e.g., by cinematograph, of the actual work involved in various occupations, never losing sight, however, of its one aim—the educational one.

Groundwork of Ethics. J. Welton, D.Lit., M.A. (University Tutorial Press.
pp. 159. Price 3s. 6d. net.)

For this short introduction to the study of ethics we have little but praise. The author has broken away from traditional methods of exposition and has succeeded in presenting fundamental facts and principles in such a way as to lead each reader to reflect upon his own personal experience, and by careful analysis of all the pertinent facts to reach a theory which shows their relations to one another.

In the first chapter the student is shown the need for a scientific enquiry into the principles which should rule conduct—a “largely passive acceptance of social opinion serves for the mass of people in the common every-day affairs of life. But in crises the need is felt for something more enlightening”—and the nature of the Socratic method being briefly explained, a summary of the fundamental facts of moral experience is given.

The remaining seven chapters are devoted to the analysis and systematization of these primary facts. Instead of long critical examinations of Epicureanism, Stoicism, Naturalism, and other “isms,” we find chapters headed Personality, Freedom, Purpose, Valuation, Ultimate Good, and The Realisation of Good. These headings suffice to show that the book is concerned with essential topics, but they give no idea of the sound commonsense and thoughtful analysis which are evident throughout the book. At the same time the treatment is not superficial, and tends to lead the reader to turn to the authors from whom brief suggestive passages have been quoted.

We may venture to remark that there will be some who will disagree with the author’s conception of the world as a place of training as an answer to the “riddle of the universe” presented by sin and suffering, on the ground that such a conception tends to develop into that of maintaining that ultimate good can only be found in a future spiritual life, and that the affairs of this life have no value of their own. It is only fair to add, however, that in the last section of the book the author shows by a quotation from J. Caird that he does not hold this extreme form of Christian asceticism—“religious progress is not progress towards, but within, the sphere of the infinite.”

It is anticipated that the book will be widely used in training colleges, and by those who desire a stimulating presentation of the principles by which men seek to harmonise the facts of moral experience.

A. E. C.

The Companion Shakespeare : As You Like It, Julius Cæsar, Richard the Second. With a Commentary and Acting Notes by J. A. Green, M.A. Each in three styles of binding, 1s. 4d., 1s. 8d., and 2s. net. (Christophers).

The preparation of the Companion Shakespeare was one of the chief interests of the last years of the late Professor J. A. Green, and it is worthy of his remarkable insight into the mind of the young student. The editor’s work largely consists of making suggestive comments or putting questions at the end of most of the scenes so as to stimulate thought and to guide observation. Further, the footnotes explaining difficult words and phrases are just what are needed to make the text comprehensible. As the editor wisely observes in his introduction :

“Elaborate introductions dealing with questions of pure scholarship are important in the right place, but neither the general reader nor the ordinary schoolboy has any use for them. The right time for work of the kind surely comes when the plays themselves are our possession. Delight in them may stimulate interest in questions of origin, sources, and the like, and there is abundant material available when such an interest has been excited. With this in view, all notes dealing with points of philological and archæological interest or with questions of text have been rigorously excluded. My object has been, first, to make the opening of the play intelligible, and then to act as a friendly guide through the intricacies of its development.

“Everybody knows how stimulating and helpful a well-informed guide can be in a picture gallery. He keeps our eyes open and our minds at work all the time. We are led to look at the right things, we are made to feel relative significances which would otherwise have escaped us. To do something of the same sort for Shakespeare is the ‘Companion’s’ aim.”

Professor Green succeeded admirably in his aim, and the memory of our own studies of Shakespeare at school makes us envy the boys and girls who will first make the acquaintance of Shakespeare through such a happy medium.

We understand that the series is to be completed along similar lines by distinguished English scholars.

C. W. V.

Human Geography. By J. Brunhes. Trans. by T. C. le Compte. Edited by Bowman and Dodge. (George Harrap and Co., Ltd. XVI+648 pp. 25s. net.)

The translation of Prof. Jean Brunhes' book, which was awarded the gold medal of the Geographical Society of Paris, will be welcomed by many teachers of geography. It would take several pages to review adequately this standard work. The prefaces are extremely valuable—as also is the first chapter, entitled "What is Human Geography"—valuable especially to those teachers who are anxious to develop a coherent and truly synthetic teaching method, and who, with Brunhes, aim at reaching "the highest thought, the thought of the terrestrial whole—the conception of the terrestrial unity."

On the basis of a classification of the facts of human geography, the author comes to the conclusion that "we consider as fundamental maps the map of water and the map of men." Three chapters on the "Essential Facts of Human Geography" deal with (1) unproductive occupation of the soil; (2) plant and animal conquest; (3) destructive exploitation. These chapters are followed by two on studies of special small areas. A chapter entitled "Beyond the Essential Facts," deals with, among other things, social and historical geography; the conclusion arrived at being that "historical and political geography rests essentially upon the consideration of localised and regional facts, while social geography, on the contrary, aims at bringing out the general influences which men undergo as the result of certain efforts and certain modes of occupation of the earth." In the final chapter, entitled "The Geographic Spirit," he deals in an interesting manner with the psychological factor in the connection between human activity and physical environment.

The editor's preface states that "To meet the needs of American conditions, certain sections and chapters have been omitted, and, at the request of the author, the regional description of the Central Andes has been substituted for Chapter VII in the original." Some may doubt the value of this change, but no one will gainsay the great value of the book or wish to withhold their appreciation of the efforts of the editor and translator. The book is well printed on good paper, and illustrated with seventy-seven maps and 146 half-tones.

E. J. G. B.

The Psychology of the Criminal. By M. Hamblin Smith, M.A., M.D., Medical Officer of H.M. Prison, Birmingham, Lecturer on Criminology in the University of Birmingham and at Bethlem Royal Hospital, London. (Methuen, London, 1922.) 192 pp. 6s.

This book discusses the physical examination of the offender, the "investigation of his conscious and unconscious mind," and the various types of offenders. It is evident that the writer is a man of wide experience, human sympathies and of wise judgment, in dealing with his refractory material. He advocates boldly a revolution in our methods of dealing with criminals, yet one feels it would be safe in the hands of a man like Dr. Hamblin Smith. We say this in spite of the fact that when the author discusses the psychological basis of his position, he is sometimes open to serious criticism. He seems to us to have accepted too uncritically the doctrines of Freud and some of his generalisations are surely unproved. For example: "We have cases of undue susceptibility to suggestion by one particular person . . . and the influence of a kind of hero-worship over another also occurs. Here there is always some repressed sexual motive at work." Again, the abuse of stimulants and sedatives is said to be "*a'ways* a sign of some underlying mental condition, some mental conflict."

Dr. Hamblin Smith has been too modest in restricting the space devoted to details of cases he has himself dealt with. We should have welcomed more, in place of the account of mental tests and the brief survey of psycho-analytic psychology. Such details might have supplied fuller proof of some of his inferences, which, stated briefly, must seem unconvincing, especially to those unfamiliar with psycho-analytic work.

Nevertheless Dr. Hamblin Smith's book contains much that is suggestive for the student of education, in particular his emphasis, following the remarkable work of Dr. W. Healey, of Chicago, on the significance of adolescence for the inception of some criminal impulse and its consequent importance for the study of the origins of crime.

A Practical Training in English. H. A. Kellow. (George Harrap and Co., Ltd. 3s. 6d.)

This is a revised edition of the book which was reviewed in a previous issue of this Journal. The fuller treatment of composition adds to its value.

XIXth Century Europe and Britain. By C. Raymond Beazley, D.Litt.
(Collins. 3s. 6d. net.)

This new book should be in the hands of all who claim to teach history. It is extremely helpful—instinct with suggestion as to fresh points of view and unexpected side-developments giving to the movements of the time new significance and clearer lineaments, and to the outstanding men reality and individual character. It is not in any sense a text-book containing the dry bones of facts. European history of the nineteenth century is treated as a whole. Great movements in certain countries are linked up with other great movements in other countries, so that each is shown as part of a whole, and therefore each is affected by the others. The development of German unity is dealt with in great detail, probably because the author was following on in the last chapter to the war of 1914-18, and because recent events have given a sinister significance to the history of Germany in the nineteenth century. Compared with this, the unification of Italy seems almost summarily dismissed. One's sympathies are so deeply roused by the Italian struggle for unity and by the fine spirit behind it, that one would wish to linger longer. The personalities of great men are presented clearly and vividly, and the frequent quotation of contemporary opinion adds to the interest and reality. Garibaldi, for instance, is to the Bourbons "a second Satan," but to the people of South Italy "a second Christ." A striking feature that specially commends the book is the insertion of "Notes on Culture History." This valuable addition is dealt out only sparingly—just enough for one to glimpse at the richness of the storehouse. A bibliography is added as an excellent guide to a fuller knowledge—but all readers will anticipate with pleasure further volumes that the author (in the preface) says he hopes to produce.

MAY B. THOMASON.

Handbook of Commercial Geography. By G. G. Chisholm. Ninth edition.
(Longmans, Green, and Co. 824 pp. 25s. net.)

The book first published in 1889, according to the preface, "now appears in a form more completely recast than any previous edition. The resetting of the entire book and the renumbering of the paragraphs have allowed of interpolations and rearrangements of matter on a much greater scale than ever before."

It seems almost an impertinence to criticise a work of such outstanding reputation. However, the subject of oil fuel appears to be very inadequately treated, as also is the place of motor traction in modern agriculture. The description of the bonanza farm (para. 253, 254, 255) is picturesque but standing alone, with no reference to the role of the motor-tractor, hardly conveys an accurate impression of present day wheat farming in the U.S.A. According to Brigham the largest quantity of wheat is raised on medium-sized farms (from 100 to 170 acres). The table in the appendix, which gives the area, population, and exports of the principal countries and commercial islands of the world (p. 770), does not include Italy in the list.

The greater emphasis on Human Geography in the schools will mean that teachers will require more definite information regarding the quantitative aspects of human activity and distribution, hence this compendium of collected facts will still be regarded as an indispensable book for every school library.

E. J. G. B.

Public School Life. By Alec Waugh. (Pp. 270. W. Collins, Sons and Co., Ltd.)

Those who read Mr. Alec Waugh's "Loom of Youth" will turn with interest to this book, in which he discusses many problems of public school life in a more systematic way than is possible in a novel. Such topics as the Relationship of the Preparatory School to the Public School, the Cult of Athleticism, the Ethics of Cribbing, the Romantic Friendship between Boys, and the Leaving Age, are discussed freely and fully.

Mr. Waugh naturally reveals in his treatment of the subject maturer style and judgment than that of his earlier book, even if one takes, as one of course should not, the imaginative treatment in "The Loom of Youth" as fully representing his point of view at that time. In particular his treatment of the romantic friendship between boys is exceedingly suggestive.

His warning, on the other hand, in reference to the dangers of prolonging the leaving age requires careful consideration at a time when the school leaving age tends to be put later, with the common approval of both schools and universities, a process for which there are of course several excellent reasons.

A Short Social and Political History of Britain. By R. L. Mackie, M.A.
B.Litt. (George Harrap and Co. Pp. 440.)

In his preface the author shows that he had realised what was an undoubted need among school histories, and he has written what, "if he dared, he would call a Philosophical History of Britain for Schools." He has "tried to leave nothing unexplained that can be explained, knowing full well that uncomprehended facts are dead facts. Such aims cannot be achieved in a book of this size without the omission of much matter usually deemed essential. The reader will find here little of the matrimonial vagaries of Henry VIII, but a heroic attempt is made to explain what the Reformation was really about: not a word about Monmouth's Rebellion, but an explanation is given of what the English Parliament actually did gain in 1689." The book should prove a valuable text-book for the older pupils in elementary schools and lower and middle classes in secondary schools. We should be inclined to fit the book to somewhat higher ages than Mr. Mackie suggests, but possibly we do the Scots boy an injustice.

The Story of Mankind. By Hendrik Van Loon. (George Harrap and Co.
Pp. 492. 12s. 6d.)

This book is certainly unlike any other history that we have met. The author is primarily a journalist, albeit a widely read and widely travelled one, and the work bears the stamp of his profession throughout in its striking headlines and arresting phrases. There are numerous inaccuracies, and there is a lack of proportion in the treatment of many parts of the vast scheme that he has attempted. Yet we confess to a liking for something in Mr. Van Loon's attitude. He cares a great deal for making young people enjoy history, as is shown by his "Foreword," addressed to the children Hansje and Willem. The illustrations which occur freely throughout the book, and are by the author himself, are of a striking type, frequently symbolical or diagrammatic, sometimes inaccurate, but never commonplace. The publishers report that the book has replaced Mr. H. G. Wells' History as the best non-fiction seller in the United States, and on the whole we are not surprised.

Suggestions for a Syllabus in Religious Teaching. By G. B. Ayres. (Second
Edition, Revised and Enlarged. Published by the Student Christian Move-
ment.)

The syllabus is designed to cover seven years of the Primary School. It is comprehensive, including Old Testament, New Testament, the Inter-testament period, and the History of the Bible—at the same time it leaves sufficient scope for the teacher to make individual selection. The material chosen for the different years is well suited to the stages of the children's development. A strong point of the book is its introduction of subject matter drawn from literature, history and nature study, well suited to bring home the points of Bible teaching.

The treatment reflects the results of modern learning. It gives a useful bibliography, the value of which, however, would be increased by the inclusion of a greater number of the more important works of reference. M. H.

The Old Testament in the Sunday Schools. By Alfred E. Garvie, M.A. (Oxon.)
D.D. (Glas.). (Published by the Pilgrim Press.)

The object of this book is to acquaint teachers with some of the results of modern biblical scholarship and to expound the principles on which lessons should be based so as to impart to the child the moral and religious truths given in the Old Testament, and to bring home to him the progressive nature of divine revelation.

Providing the teacher makes use of the valuable bibliography suggested in the last chapter the book achieves its end.

The teacher is urged to suit his subject to the stage of the child's development; teaching should be such that, as an adult, he has little to unlearn.

The author argues, convincingly, that taught as he suggests, the Old Testament in its true relation to the New Testament is essential to religious education. M. H.

The Physical and Political School Atlas. J. G. Bartholomew. (Oxford Press.
Limp cloth covers. 2s. 6d. With index.)

This 1922 edition contains excellent physical maps of Central Europe, Mediterranean, S.E. Asia, S. Africa, and S.E. Australia. The different sizes of print on the map of England, for example, would have greater much value if governed by some system of classification which was applied rigidly. Worksop is in larger type than Chesterfield; is this because the latter is a longer word? Chelmsford is in much heavier

type than Southend, because the former is a comparatively small county town ? Hastings is in much bolder type than the administrative centre of the West Riding, Wakefield, because a battle was fought near the former place in 1066 ? It would be an advantage if political and historical classifications were restricted to the political maps.

E. J. G. B.

Psychology. A Study of Mental Life. By Robert S. Woodworth. (London Methuen and Co., 580 pp. 8s. 6d. net.)

This introduction to Psychology by the Professor of Psychology in Columbia University has been used in mimeograph for two years in beginners' classes at Columbia, and is considerably above the average of introductory psychological textbooks of recent years. The arrangement of the book and the choice of subject-matter are highly commendable ; the explanations are, in the main, simple and sufficient. Valuable features of the work, from the point of view of the student, are : the wide field from which the illustrative examples are drawn, and the suggestive questions appended to each chapter. The book would be more easily read in this country if the author had minimised the differences in the use of language between the two great English-speaking peoples.

E. C. C.

An Experiment in Number Teaching. By J. B. Thomson, M.A. (Longmans, Green and Co.)

This little half-a-crown book is a record of a co-operative experiment carried out in the Demonstration School of the Mather Training College, Manchester, and is a supplement of "The Art of Teaching Arithmetic," by the same author.

It is full of suggestive help to the teacher who is prepared for individual occupation work with her class. There is a critical survey of the Montessori Method, and a useful chapter summing up the guiding principles which animated the experiment. The main body of the book, some sixty pages, is concerned with the detailed account of the number plays given to children from five to eight years of age.

W. A. B.

An Arithmetic of Citizenship. By E. Riley, B.Sc. (Econ.), F.S.S., and J. Riley, B.Sc. (Sidgwick and Jackson. 124 pp. 2s. net).

A useful book to put in the hands of older scholars who are working privately. The processes of Arithmetic are illustrated by the solution of a wide variety of common problems in wages, insurance, rates, etc., such as frequently present themselves in everyday life, thus bringing practical applications into prominence throughout the book. The notes and explanations are lucid and the information is well up to date. The Teachers' Edition (2s. 6d. net) contains Answers and a number of useful notes supplementary to the text of the School Edition.

A. P. B.

Readings from the Literature of Ancient Rome. By Dora Pym. (Pp. 334. Harrap and Co.)

A series of translations from passages of importance and special interest in Latin literature. The passages are well chosen and with careful study will give a good idea of some of the main characteristics of the chief writers of Rome (both poets and prose writers), and also will introduce the pupil to the genuine atmosphere of Roman History. A most useful book, either as a supplement to Latin studies in school, or for use in classes in which Latin is not being studied. |

Readings from the Bible. By B. L. K. Henderson and F. G. Russell. (Pp. 234. Harrap and Co.)

This book provides a collection of many of the most beautiful passages in the authorised version. The writers advocate the use of selections on the ground that it is not wise to place the whole Bible in the hands of the young scholar, as well as for the advantage which careful selection can give. They have had particularly in view the beauty of the passages, and their selection seems to us an admirable one.

Child versus Parent: the Irrepressible Conflict. By Rabbi Wise. (Pp. 139. Macmillan and Co.)

Without any parade of psychological knowledge of childhood or of conflict (though it is evident in the background), Rabbi Wise, in this little book, discusses in a manner which will be especially helpful to parents, the problems of discipline and social relationships in the home.

The World. (Book III.) (Longman's Geographical Series. 613 pp. 7s. 6d.)

The new edition of this book is an example of successful modernising of an old book of proved value. It is a little difficult to imagine the grounds for the retention of the data concerning the size of the national armies and navies in peace and war. In what sense are these grounds truly geographical?

English Study and English Writing. Henry A. White. (Heath and Co. 336 pp.)

The hints and principles on the writing of English are simple and forcible. The treatment of English literature appears to be influenced by American examination questions, though teachers in this country may find them useful when revising their pupils' knowledge of the facts.

NOTICES OF FOREIGN PERIODICALS.

The Journal of Educational Psychology. Vol. xiii, No. 9. December, 1922.

In an article entitled "The Limits set to Educational Achievement by Limited Intelligence," Miss Margaret V. Cobb concludes on the basis of an extensive research in different localities in the United States that "Geographical differences in intelligence are enormous, the median for the lowest state being only half as great as that for the highest. In certain states more than half the population is below the level apparently necessary for academic high school work; in others, three-fourths of the population may be expected to enter high school. This has an important bearing on the distribution of school funds."

The Journal of Educational Psychology. Vol. xiv, No. 1. January, 1923.

"Mental Tests and Linguistic Ability," by Stephen S. Colvin and Richard D. Allen, is based upon investigations among children of American and Italian parents, the Terman and National Tests being used. "While the children in both groups tend to be rated lower in mental age by the National than by the Terman tests, the difference is considerably greater in the Italian than in the American group. It is reasonable to suppose that the individual Terman tests are a more accurate determination of intelligence than the group National Tests; further, that the linguistic factor is less important in the former than in the latter tests. It would seem evident then, that the National Tests do not give an accurate means of determining the mental ages of the Italian pupils, and that the verbal factor has contributed in lowering the individual scores."

"The Effect of Encouragement and of Discouragement upon Performance," by G. S. Gates and L. Q. Rissland. Performances in Motor Co-ordination and Colour Naming Tests were recorded, certain subjects being encouraged, others discouraged, after their respective performances, others merely repeating the test without comment being made. The conclusions show only a slight difference in the average improvement of the three groups. "Such difference as there is seems to be in favour of encouragement or discouragement rather than mere repetition. We might say, then (with the usual realisation of the inadequacy of the data), that it is better to make some comment about the score than to make none; that it is a little better to make an encouraging than a discouraging remark; that relatively poor individuals are more likely to be unfavourably affected by discouragement than are relatively proficient persons; that the effect of these incentives does not seem to be constant for the two tests. The desirability of performing such an experiment on more susceptible subjects, as children, using more complex, and more reliably measured functions, is obvious."

BOOKS RECEIVED.

Teaching to Think. By Julius Boraas. Pp. 285. (Macmillan).

Adolescence and High School Problems. By Ralph W. Pringle. Pp. 386, (Harrap).

Principles of Secondary Education. By Ellwood P. Cubberley. Pp. 741. (Harrap).

Introduction to the Use of Standard Tests. By Sidney L. Pressey and Luella O. Pressey. Pp. 263. (Harrap).

Bulletin of the National Research Council, Vol. iv, Part 4. Mechanical Aids for the Classification of American Investigators. By Harold C. Bingham. Pp. 50. (National Academy of Science, Washington).

Silent Reading, a study of various types. By C. H. Judd and G. T. Buswell. Pp. 160. (University of Chicago.).

The Life and Work of Sir James Kay-Shuttleworth. By Frank Smith, with an introduction by Sir Michael Sadler and a Chapter by Lord Shuttleworth. (Murray).

A Text Book of Inorganic Chemistry. By G. S. Newth. Pp. 772. (Longmans, Green, and Co.)

A welcome new edition, enlarged and revised, of an old favourite. Chapters are included on the structure of the atom, the electronic theory of valency, and also on radium.

JOURNAL OF EXPERIMENTAL PEDAGOGY.

The following numbers of the *Journal* are urgently needed :—

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- Vol. V. No. 3.
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- Vol. VI. No. 3.

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The Problems of School Practice.

BY H. WYATT.

[NOTE.—This paper, and one to follow entitled "Practising Schools in the Future," were designed to form part of a Report on the Training of Teachers to the Government of India. The writer who, after experience in English Secondary and Primary Schools, and as Inspector of Schools, became Principal of the Government Training College, Lahore, was granted leave in 1921 to visit the British Isles and U.S.A. for the purpose of making his report, and in the course of his travels he obtained first-hand knowledge of many training centres and their methods. Owing to financial reasons the Report is not being printed officially, as was Mr. Wyatt's previous Report on Methods of School Inspection in England.—H. WARD, *Chief Inspector of Training Colleges.*]

NOT long ago, the ordinary training college had a "model" school attached to it, under the same government, the purpose of which was to afford teaching practice and an example of a school under improved conditions, to the college students. For the student under training schools may perform at least three distinct and valuable services:—

- (1) That of familiarising them with actual school conditions;
- (2) That of exhibiting to them higher ideals;
- (3) that of acquainting them with new and suggestive movements.

In training for elementary teacherships in England attention is paid chiefly to the first two: students with high preliminary qualifications, intending usually to take up secondary school work, are more capable of profiting from a study of innovations.

The old "model" school was expected to perform the first two services for the students in training. But it failed, through the nature of its being. As attached to the college, and observing the college standards and curricula, the conditions which it represented were other than those of the ordinary schools in the neighbourhood. The services of a special staff, and the continuous ministrations of a succession of college practising students, accentuated this artificiality. And for the last-named reason the school could scarcely be "model," granting that the word signifies a possible or even a desirable characteristic. It is now being recognised that the two distinct purposes can only within narrow limits be served by the same institution; that the college has to prepare students to make the best of things in schools as they are, and that this part of its business can be best accomplished by assigning students varied practice in ordinary schools. At present, the whole time practice of students takes place in a number of ordinary public elementary schools (not in a single "model" institution) which have as a rule no official relation to the college except as offering it a field for practice. Local bodies permit the training colleges to make this use of their schools, and in big centres of population with

many schools and more than one training college a committee representing the local education authority and the colleges allot selected schools for this purpose. The college principal, or lecturer on method on her behalf, then arranges with school head teachers the distribution and time table of students for practice, and the head teacher undertakes to make them at home in the school with as little disturbance of the ordinary work of the school as possible.

So far this substitution of several ordinary for one model school is part of the general tendency to connect the work of training more immediately with its object. The students of to-day are saved from the disillusionment that came when they entered schools with which they were unacquainted beforehand, and from the narrowness caused by familiarity with one set of conditions only. On the other hand it is not enough merely to familiarise students with ordinary conditions ; they have also to learn how to make the best of them. And for this the ideals preached in a training college may fail to carry conviction, or to last in the memory, unless they are demonstrated in actual existing schools. The student must believe her ideals are workable. The "model" school was supposed to fulfil this purpose. But again it failed, for two amongst other reasons. In the first place no school can attain a high standard of excellence while it is being taught largely by a succession of students under training ; though the material conditions of excellence—its rooms, ventilation, playing grounds, etc., and parts of its organisation, may exemplify a high standard. But here again, "model" conditions cannot easily continue, because ideals rise as knowledge grows and it is impracticable to be constantly altering an existing building to bring it up to date. Inevitably new buildings elsewhere supersede it. The word "model" in fact implies a wrong conception of excellence. There is no such thing as a model school for any but its own set of circumstances : excellence lies in adaptability, and no student is prepared for her work who has learnt to follow one existing example above all others.

With the abandonment of "model" schools, and the substitution for purposes of practice of ordinary schools exemplifying ordinary conditions there remains the need of demonstrating the practicability of improved teaching and improved conditions of teaching. This has given rise to a demand for "demonstration" schools, which in the altered circumstances of to-day may preserve one function of the old "model" school, that of setting a high school standard, while reducing the risk of slavish imitation and uniformity. The circumstances have altered in more than one direction. One is in the extension of the ordinary teaching practice over a wider field. Acquaintance with customs and conditions varying from school to school in itself forestalls the tendency to uniformity of method, while within limits demonstration of improved practice is possible even in ordinary schools without invalidating the student's experience in them as a preparation for the difficulties of ordinary school work. For example, the difficulties in regard to practice commonly mentioned in training colleges are the general conservatism of teachers, especially of the older and experienced teachers (amongst whom some head teachers are included) and the unsuitability to modern methods of teaching of many school syllabuses. Under the guidance of her tutors a student may be able to evade this conservatism or select within the

syllabus, in her effort to adhere to higher ideals in practice, and in doing so may learn the difficulties which ordinary schools present. Cases may and do arise in which her power of applying principles learnt at the college is severely limited, as where she finds, for example, cube root or recurring decimals (discarded from modern school courses in mathematics) set for her practical lessons, or a programme in history that concentrates upon kings, constitutions, and battles, for a class that would be more interested in biographies or social and domestic life. College authorities usually try to preserve a rough mean between confining practice to the best schools and exposing their students to the most backward, but in any case what the student has to learn is the habit of doing her best with the conditions in which she is placed. This statement of the position shows both the need of regular demonstration of good teaching supplementary to that possible in ordinary schools, and the insurance which those schools present against the risks attendant on the single "model" institution.

A second changed circumstance is in the character of present training college staffs. They are now of a quality which would intelligently anticipate any tendency in the student to regard a "demonstration" school as an example for direct imitation. The word "model" school has been generally discarded; and a common function of the demonstration school is to prove the workability in actually attainable conditions, rather than the universal validity, of educational principles upheld in the training college. It may be observed in passing that both these changes in the use of schools for practice—the change to the use of many ordinary as distinct from one special school, and the change in the function of the special school attached to the college—are calculated to meet the charge of idealism often levelled against training colleges by the practical teacher.

This indispensability of a regular provision for proving educational doctrine before the student justifies the Board of Education's direction that "as a rule there should be a demonstration school closely associated with the Training College." The Board goes on to add: "The conditions of association should be such as to allow the governing body of the college to exercise effective influence over the details of the organisation, staffing, discipline, and instruction, and to secure that these shall be the best available." As yet however few colleges have schools attached to them which fulfil these conditions; and there is some difference, and even confusion of opinion as to the shape which the school should assume to effect its object.

Perhaps the simplest way to state the situation is to begin by drawing a distinction between a school for demonstration and a school for experiment. A school intended to benefit the training student by exhibiting to her a high level of teaching and equipment, for example—an interpretation often placed upon the term demonstration school—might appear very different from an institution intended to put innovations to the test, from a school, that is, for experiments. And there clearly is a contrast in fact between mere adherence to accepted principle and trying a fresh line of action to see how it works. Some college authorities draw or admit this distinction, and exclude the experimental function from the demonstration school. In other cases the distinction has been denied. Variance or hesitation on the subject in England may be largely due to

inexperience. Many colleges still have no demonstration schools at all. And in practice the term has been stretched to cover schools which are not an integral part of the main institution or under the same government, but happen through proximity or personal arrangement to be sufficiently under the college influence to be distinguished as "demonstration" schools from ordinary practising schools in the neighbourhood. In such cases the "demonstration" value of the special school may amount to little more than a rather higher level of ordinary teaching than elsewhere, or a willingness to accept or make trial of syllabuses suggested from the college, or to admit more illustrative or general practice. In other cases however the school comes closely under college control, and here the delimitation of function becomes more clear. The demonstration school that is governed immediately from the college, or wholeheartedly welcomes its control, inevitably begins to assume a specific character corresponding to the ideals that the college stands for but different from that of other demonstration schools co-operating with other colleges. In other words, instead of merely representing a general high level of ordinary teaching and equipment, it draws away from the ordinary as it approaches the character which the college would have a good school assume. It becomes in a word a school typical of the college, in observation of the college educational creed, demonstrating (*i.e.*, putting to the proof) its workability. I have in mind two such institutions in particular as I write, one which started on its career some years ago in which the ruling principle is "free instruction," which may be briefly summarised as habituating each pupil to work within the range of subjects and material presented in the school at subjects and times of her own choice and at her own pace, rather than under general class instruction in fixed subjects at stated hours. This principle adopted with the youngest children in the first instance receives application higher up the school each successive year, and may eventually revolutionise the whole school. Another instance is that of a special nursery school attached to a college specialising in training teachers of the youngest pupils conducted in the spirit of Dr. Montessori through adding certain features of its own. In both cases the "demonstration" schools are entirely controlled by the college, being in effect a part of the institution. The school and college staff work in close contact, the school teachers or head teacher at least, reckoning on the college staff, and giving lectures on occasion to the students. In one case the students practise in the school, for "doing is the best test of learning," and precepts must be proved to work in the green tree to be transferred with confidence to the dry. The other school the students attend only for observation, as the school is in its pioneer stage and can best work out its organisation as it goes along without interference from outside.

In both cases, and in others where similar schools exist, a special school, which is a piece of the college, is reckoned an invaluable aid in the training. For it enables the college to do what with ordinary schools not under its control is impossible, namely, to test its doctrine of education against the actualities of present child nature with many adventitious circumstances of the current public school system removed. The college is to show what can be done when alterable circumstances are favourable, and thus to point the way to practicable reforms.

The reasons why the question whether demonstration schools and schools for experiment are incompatible has received different answers can now be understood. To some extent the demonstration school of every college is experimental. At any rate, it is attempting a definite educational advance ; and no self-respecting college deliberately stereotypes its practice or restricts enthusiastic teachers from introducing fresh ideas. Yet there is a real difference between a school which in the main keeps to recognised principles, in conditions reasonably imitable, and admits subordinate experiments within its general scheme, and a school which makes a point of working out the new. But each school has something of the character of the other. If the "demonstration" school cannot avoid some measure of imitation, the experimental school, on its part, must preserve continuity both in time and in organisation, and cannot sacrifice its pupils to purely speculative adventures. And for the purposes of training, demonstration, not experiment, has prior importance, and is indeed an invaluable item in the training. Its serviceability for training accounts for the opinion that a demonstration school should ordinarily conform in its main organisation to the general system ; it exists to demonstrate what can with some effort be attained, or at any rate its departures should not be radical. The school for experiments may assume specialised conditions, as the presence of a staff of experts qualified in their particular subjects and prepared to give a first test in favourable conditions to new doctrines of method, organisation, management, or discipline. Such a school exists, for example, in the *Lincoln School, New York, which serves largely the purpose of educational laboratory to the Teachers' College of Columbia University, New York.

In contrast with the Horace Mann Schools, which serve as demonstration schools for the same college, the Lincoln School does not provide regular observation lessons for the college students. In the former schools the staff consists largely of teachers who, besides their ordinary teaching or often as part of their ordinary teaching, illustrate in their instruction certain features of good teaching or points in procedure selected in consultation with Teachers' College professors who wish to supplement the effect of their lectures in this way. The Lincoln School staff is concerned on the contrary with substantiating discoveries, "trying out" (in American phraseology) promising innovations, innovations often the conclusions of long study on the part of college professors, which await before publication proof in practice. Some of the innovations thus being worked out at the time when the school was visited included amongst others a programme in physical science which aims at presenting a properly connected body of teaching while deriving it at every opportunity from common facts of ordinary life and practice ; the teaching of spelling by more economical methods than are customary, the working out of complete psychological and physical histories of individual pupils, and the formulation of suitable courses in history with a sociological bias.

The experiments are subject to periodical measures of progress, with staff discussions of successes and difficulties as the trial goes on, and the principal forms an independent opinion by personal visits to class rooms.

* The Fielden School attached to the Manchester University was an example of an experimental school in England, which unfortunately changed its character recently through lack of support.

Such a school, though the wholesale admission of college students for observation or practice could obviously spoil its character, still performs for those students special services. The Lincoln School welcomes the occasional visits of selected individual students in company with their lecturers, who may profit from a careful investigation of what is going on, without in any way disturbing it, and carry back to their fellow students an account of what they have found out. For this purpose an advanced student, and a full day's visit or more, are preferred, and the principal (or members of the staff) find time to help with fuller information. Thus students under training get to know reforms under the test in various parts of the educational field, and learn to see education in evolution not as a purely static process.

This effect is heightened when opportunities are provided for occasional addresses or talks to the students by experts on the school staff at grips with practical school problems. And the students can share in the increase of knowledge and reforms in practice which are offered to the educational world generally as the results of the tests of fresh ideas carried out in the school and are published in new text books, special pamphlets, and current educational literature.

But a school for experiments is exposed to special temptations and dangers. These are the risk of incoherence, of sacrificing the pupil to the general cause, and of over-specialisation of the conditions of the experiments or character of the school. The principal's art and tact lies in knowing and forestalling these risks. Incoherence, for instance, may be caused through innovations interfering or conflicting with one another, or—which is much the same thing—through enthusiasts on the staff holding strong divergent views. But it is easy to exaggerate this difficulty. Within reasonable limits there is little harm in pupils learning by one method in one class and by another later, and breaks in the teaching are made up for by the zest of the teachers. Experiments need not be rash even though they are fresh. It appears that the pupils at the Lincoln School compare very favourably with the average. This is partly due to the specialised conditions of the school, excellence and enthusiasm of the staff, room for individual attention, and careful limitation of classes. In such a case one cannot of course argue from the success of an innovation in this school to its success generally—not every teacher of history, for example, can make a success of teaching it throughout from the sociological standpoint, nor every teacher of the mother tongue make each step in learning to read a response to a definitely felt need in the pupil; but it seems generally a wiser policy to test innovations under favourable before extending them to less favourable conditions, thus eliminating as far as possible all but universal causes of failure. But from successes in very exceptional conditions little of general applicability may emerge.

Lastly, there is always a danger of the school acquiring too particular a character, or being dominated by one personality, and thus forsaking its original purpose. From being a school for experiments it becomes an experimental school—a school which is itself an experiment in one direction. Of schools of this type both America and England offer many examples, as, for instance, the Gary Schools in Chicago, the platoon schools of Detroit, the laboratory school at Streatham, Surrey, or the partnership school at Tiptree, Essex. These schools also have their value for the

student in training, certainly for advanced students who have acquired perspective. The school for experiments, however, attempts continually to carry on experiments without being carried away by any. This requires a particularly sane enthusiast at its head, able to reconcile conflicting zeals in his staff, to detect and absorb what is of permanent and universal value, and to combine variety of effort with sufficient unity in the whole.

So far we have been considering means by which the school can assist in the work of training. But there are also those who recognise that the training college may do schools direct service, besides supplying them with teachers. As a rule, training college staffs are too fully occupied at the college to attempt to spread their influence outside it, and extension work in training for this and other reasons is less common and systematic in England than in America. In England the training colleges keep a good deal to themselves. There are signs however of a recognition that it is a public duty to make their work more generally known. Assuming as we must that the growing point in educational practice and theory is to be found in the college, there are colleges that are willing to act as centres of immediate influence for surrounding areas, and instances in which the members of the staff are threatened with overwork because they are reluctant to refuse invitations from schools and educational bodies to hold courses and give demonstrations to groups of teachers in local areas—a sign by the way that confidence in training is increasing as training methods and doctrine grow more enlightened and to the point, and a result that might reasonably be expected from the relations established between schools and college through the extension of the field of students' practice.

The close relation of training colleges "with elementary and secondary schools, with higher and technical education, and with universities and local educational authorities put them at the crossroads of educational activity," in the view of a president of the Training College Association, so that teachers in training colleges are "peculiarly favourably placed for surveying a wide field of educational activity and therefore of correlating the work of different branches of education." This is true, and constitutes one reason for the claim frequently made for altering the constitution of training colleges so that the students while at college shall share in the general life of the university.

Moral Indignation.

BY W. H. MOBERLY.

NOTE.—In the following paper the nature and worth of "moral indignation" is analysed and appraised as a reaction, primarily, towards the misdeeds of adults. It is argued that "moral indignation," though it may possess a certain nobility and a high degree of value, is never the highest conceivable mode of reaction towards wrongdoers; and that any treatment of the wrongdoer of which such "moral indignation" is the guiding principle is morally unsatisfactory. The argument is not directly applied to the training of the young by parents or teachers, but it is obvious that, if "moral indignation" is deprecated in regard to adults whose responsibility is at its maximum, this will apply in double force where the character of the pupil is not yet fully formed.

THERE is a memorable passage in one of Mr. G. M. Trevelyan's books which describes the effect on Mr. Gladstone of his witnessing the trial of the Neapolitan prisoners in 1851. These prisoners were men of lofty idealism and of moderate political opinions, and they had been steadily opposed to all armed revolt. But they were convicted, not without much help from the Bench, and were sentenced to twenty-four years in irons, on the evidence of a witness who only differed from Titus Oates in that no one in court believed a word he said. Meanwhile Mr. Gladstone, who happened to be in Naples at the time, sat as a spectator on the public benches, and "glowered with ill-restrained indignation at the wicked judges and false witnesses, and shook to think that this was perpetrated in the name of order and religion." This experience roused him to such action as modified the course of European history and caused Garibaldi himself at a later date to hail him as "Fore-runner." Explaining Mr. Gladstone's conduct, Mr. Trevelyan continues—"In this man's heart, deeper than party associations and personal predilections as to European politics, deeper even than the curiosity of a classical scholar, and far deeper than the desire for ease on a well-earned holiday, flamed the disinterested hatred of injustice and cruelty, often found as the handmaid of other passions, but seldom thus the lord and dictator of the soul."¹

The writer clearly intends this language for very high praise, and the majority of his readers will agree with him. Of course it is possible to hold a much lower estimate than Mr. Trevelyan's of the value of Mr. Gladstone's public career. But most people will agree that his power for good, whether greater or smaller, was very closely connected with his capacity for moral indignation. He would thus illustrate the thesis of Dr. McDougall² that anger is the great source of reserve energy. In assigning a high value to such indignation all those writers will naturally concur who see in it the true ground of all punishment, and still more Dr. Westermarck³, to whom it is the ultimate source of all moral judgments whatever.

But in this there is something paradoxical: for is not "righteous anger," it must be asked, a self-contradictory conception? Thus Bain declares that "anger contains as its essential peculiarity an impulse knowingly to inflict suffering on another sentient being and to derive a

¹ *Garibaldi and the Thousand* (Nelson's Edition), pp. 57-58.

² *Social Psychology* (1st Ed.), p. 61.

³ *Origin and Development of Moral Ideas (passim)*.

positive gratification therefrom."¹ And though this is much too sophisticated to serve as a definition of anger in its more primitive manifestations, is it not still true that anger, as a motive for action in rational beings, is always—in Sidgwick's phrase—"a malevolent affection"?² And is not the desire to injure another human being contrary to those principles of universal benevolence and goodwill towards men which are recognised by all the best moralists and which are most trenchantly and unflinchingly proclaimed by the followers of Christ?

This objection is most simply met by the assertion of a difference in *quality* between any such disinterested indignation and that envy, hatred, malice, and all uncharitableness from which we rightly pray to be delivered. "The indignation raised by cruelty and injustice," says Butler, "and the desire of having it punished, which persons unconcerned would feel, is by no means malice. No, it is resentment against vice and wickedness: it is one of the common bonds by which society is held together; a fellow-feeling which each individual has in behalf of the whole species, as well as of himself."³ T. H. Green agrees: "Indignation against wrong done to another has nothing in common with a desire to revenge a wrong done to oneself. It borrows the language of private revenge, just as the love of God borrows the language of sensuous affection."⁴

And Dr. Stout, echoing the language of Hegel, emphasizes the inseparability of the hatred of wickedness from the love of virtue. Just resentment, he declares, against the enemy of social order is merely the obverse aspect, the necessary counterpart, of the spirit which pursues union and co-operation as its supreme end.⁵ We are reminded of Browning's description of Dante:

" . . . who loved well because he hated,
 Hated wickedness which hinders loving."

Moral indignation, then, it is suggested, differs from ordinary vindictiveness in being disinterested, discriminating, and impersonal. It is disinterested, in that it is free from any taint of selfishness. The misdoings of the Neapolitan Government injured no private or party interest of Mr. Gladstone. It is, then, a pure and generous emotion. It is discriminating—at least in desire and intention—in that it is proportional to, and limited by, wrong-doing. It is impersonal, in that it is directed against, not persons as such, but moral states. It may well be that Mr. Gladstone would have made Bomba and his agents suffer if he could, but even so what actuated him was not a direct impulse of ill-will to them as individuals. What he hated was not so much Bomba as cruelty and injustice, and Bomba only as being, for the moment and in one respect, an embodiment of these vices. Hence his own attitude is free from the cruelty he detests and denounces.

So also, in definitely Christian circles, the attempt is often made to reconcile approval of this stern indignation, which is attributed to the

¹ *The Emotions and the Will*, ch. ix., 4.

² *The Method of Ethics*, p. 321.

³ Sermon IX, *Upon Resentment*, §7.

⁴ *Principles of Political Obligation*, §183.

⁵ Lecture V, *War and Hatred*, p. 122, contributed to *The International Crisis*, Oxford Univ. Press, 1915.

Divine Being Himself in the scriptural phrase "the wrath of God," with the duty of universal goodwill by insisting on the impersonal character of such wrath. We are bidden to hate the sin while still loving the sinner. But here again we are pulled up sharply by the doubt whether such an attitude is either possible or rational. Thus Sidgwick,¹ in the course of a painstaking analysis, suggests that this maxim presupposes a subtle complexity of emotion too far out of the reach of ordinary men to be prescribed as a duty, and that, if such indignation, expressing itself in the infliction of pain, is to be approved at all, a temporary suppression of benevolence towards wrongdoers must be admitted. (It was perhaps only a cruder version of this which was expressed to me early in 1915 by a friend who gave it as his opinion that "Christianity must have a moratorium during the War.")

Dr. Stout² goes further than Sidgwick, and denies that the proposed distinction is admissible in principle. Evil is null and nought except as characterising personal will and character, and it may further be queried whether hatred is possible at all except towards persons; whether that is, it can even be an *abstract* sentiment in Dr. McDougall's sense; and whether, when we believe ourselves to be hating wickedness and vice in the abstract, we are not only doing so by tacitly personifying them. Carlyle³ and Fitzjames Stephen⁴ go further still, and roundly decline to make any such separation. They have no doubt that they themselves hate scoundrels and that they do well to hate them. Fitzjames Stephen's philistinism certainly expresses the genuine sentiments of very many: "I for one do not love such people, but hate them, and if I wanted to make them happy, which I do not, I should do so by pampering their vices, which I will not."

The point which I am here trying to make, and with a view to which I have so laboriously been citing witnesses, is this—that there exists no general agreement as to the nature or the value of moral indignation. Some hold that it is never legitimate; and, among the others, there is little agreement as to its limits, in regard to the causes which produce it, the objects towards which it is directed, or the actions in which it may properly express itself. It is no use here appealing to the judgment of the wise, for the wise do not agree among themselves.

Let us then try to examine rather more closely in the light of some recent analyses the question: What is the precise relation between moral indignation and ordinary resentment? How far are they alike, and how far different in regard to (a) the situation which evokes them, (b) the behaviour in which they express themselves?

(a) As regards the cause of anger, Dr. Westermarck⁵ is our great authority, but, unfortunately, his treatment is far from clear. On the one hand he insists that judicial punishment is the expression of *public* indignation. It has not grown up through the community's taking over, in order to regulate it, a lawless system of private revenge. Its informal precursor is rather to be found in lynch-law. Even when there is some

¹ *Op. cit.* p. 323.

² *Op. cit.* pp. 122-3.

³ *Essay on Model Prisons in Latter Day Pamphlets.*

⁴ *Liberty, Equality, Fraternity*, p. 270.

⁵ *Op. cit.* Vol. I, especially chs. 2, 3, 5, and 7.

connection between State punishment and a previous custom of private revenge, the emphasis should be on *custom*—*i.e.*, the earlier state of things is one in which revenge is not only practised without censure but is enjoined as a duty by public opinion. Such public indignation, as distinct from private resentment, has about it something authoritative. It is in Westermarck's eyes the true moral basis to-day of our system of punishment. Here Westermarck's conclusions seem to require him to stress the difference between true moral indignation and mere private resentment. But Westermarck the moral philosopher and historian of institutions is hampered by Westermarck the genetic psychologist. For, to the latter, moral indignation has its origin *in* ordinary resentment, of which it is only one species, very gradually differentiated from others. And resentment, or unkindly retributive emotion, is defined as “an aggressive attitude towards a cause of pain.” The close connection between moral and non-moral resentment is indicated, among other things, by the fact that a man righteously angry *looks* exactly like any other man in a rage. The facial expression of Mr. Gladstone denouncing Bulgarian atrocities or stigmatising some adroit manœuvre of Mr. Disraeli as “devilish” is much like that of Achilles quarrelling with Agamemnon, or of Henry II transported with fury at the pretensions of a turbulent priest.

Following this line of thought, Westermarck recognises as the special qualities of *moral* indignation (when it does develop), disinterestedness, impartiality, and “a certain flavour of generality.” These are only gradually acquired, and they are due to the influence of custom. It is at some time during the establishment of custom that the magic change from the indicative to the imperative mood takes place. After all, then, the imperative character of moral indignation, like all other moral imperatives, has only a naturalistic basis: it rests on nothing but man's instinctive conservatism, his discomfort in the presence of the unusual or the unknown.

On this view, will not moral indignation then always be, in Westermarck's own vivid phrase, “like a man of low extraction who, in spite of all acquired refinement, bears his origin stamped on his face”? Dr. McDougall¹ at any rate thinks so; and he sets himself to find a more satisfactory psychological basis for the ethical difference which he recognises between moral indignation and any kind of vindictiveness. Thus he draws a sharp distinction between “moral indignation” and “vengeful emotion” (with its two sub-forms of “resentment” and “revenge”.) Both are complex emotions containing the primary emotion of anger as their most striking constituent. But whereas vengeful emotion is due to the fusion of anger with self-love, moral indignation results from the fusion of anger with tender emotion—*i.e.*, the emotion which in its simplest form accompanies the parental instinct is then transferred through association (by contiguity or similarity) to other people's children, thence to anything weak and helpless, and finally, by a sympathetic reaction, may come to be felt in the reverse way by the weak towards their benefactors, children towards parents, men towards God. “Paradoxical as it may seem, beneficence and punishment alike have their firmest and most essential root in the parental instinct.”²

¹ *Op. cit.* pp. 140-4

² *Op. cit.* p. 73

I must not pause to criticise McDougall's theory either of the origin of altruism or of the mode in which its area is extended. For our purpose, what is important is his insistence that moral indignation always differs in kind from vindictive emotion, in being essentially altruistic and protective. Even its aggressive quality is really due to tenderness—tenderness towards the victims of outrage. It is therefore generous and admirable, and failure to feel it in case of wrongs to others argues a moral defect. Thus McDougall himself suggests that, in those nations which have abolished capital punishment, the majority of the population are probably deficient in this parental instinct.¹

An even sharper distinction is, of course, made by Butler² and Green,³ who insist that the object of moral indignation is always "injury" as opposed to mere "damage"—*i.e.*, that it is called out only by what is felt to be a violation of "right," and so is "plainly linked with our sense of virtue and of vice." In modern times Mr. Shand seems to adopt the same view, for he speaks of "righteous indignation" as anger operating within the widest and most valuable of all mental systems, which he calls "respect for conscience."⁴ Now it will presently appear that this last difference is of very great importance for our enquiry. For if we hold, with McDougall, that indignation derives its moral quality solely from the interests which it protects, it implies no moral relation between those who are indignant and him against whom their indignation is directed. But if it is called forth, not by any and every aggression even against those we love, but only by *wrongful* aggression, then it implies the taking of a positive interest in the mind of the aggressor which must raise many fresh problems.

(b) But before pursuing these issues further it will be convenient to say something on the other question I have raised—*i.e.*, the question how the *behaviour* of moral indignation is related to that of ordinary resentment. Now whatever else moral indignation may contain, anger is certainly its most obvious constituent. We must begin, therefore, by examining the different ways in which anger naturally expresses itself, for anger is common to moral indignation and to ordinary resentment. In doing so, I shall follow chiefly Shand's account,⁵ but I select only those varieties which seem to have some bearing on our particular question..

(1) According to Stout⁶ and McDougall,⁷ anger has no specific stimulus of its own, but may be called out by the obstruction of any of our impulses, and its action is directed towards removing the obstruction. "It is an effort to overcome resistance by main force" (Stout). A very simple way of removing the cause of annoyance is to destroy it. But its destruction, or even its injury, is not directly desired or intended except as a means to satisfying the baulked impulse. This is perhaps most clear when the impulse whose thwarting causes the anger is the impulse of fear, as in panic.

¹ *Op. cit.* p. 75

² Sermon IX, on *Resentment*.

³ *Op. cit.* §182-§183.

⁴ *Foundations of Character*, p. 57.

⁵ *Op. cit.* Bk. II, chs. 3-6.

⁶ *Manual of Psychology* (3rd Ed.), pp. 425-8.

⁷ *Op. cit.* pp. 59-61.

Men will wildly resent any obstruction to their flight from a burning theatre or a sinking ship, and they will ruthlessly trample on or destroy all who stand in their way. But, the moment they have achieved their purpose and opened a way of escape, they will abandon their victim and continue their flight.

(2) Shand believes there is a yet more primitive type of anger, whose impulse is merely to destroy, not only the cause of annoyance, but anything that occupies the field of attention. A type would be the angry child who smashes his toys or anything which happens to be in his hand. Indeed, an angry man has been described as one who has a strong impulse to kick somebody or something.

(3) Shand distinguishes from both of these the impulse of revenge proper. Its end is neither to kill nor to overcome opposition, but to inflict a punishment for a past offence, and in human beings at least there tends to be some sort of equivalence between offence and retribution.

Now it is this type of anger which most naturally adopts the infliction of pain, as distinct from destruction or disablement, as its approximate end. This implies, as both Westermarck and Shand point out, considerable intelligence, and is therefore a late development. The angry man must have learned from experience that a successful attack upon his enemy normally causes that enemy to suffer, before he can picture such suffering to himself in advance vividly enough to gloat over it and make it an end for action. This type is seen most clearly when the pain aimed at is mental, as when a man tries to make another wince by sharp sayings. To do this successfully requires considerable intimacy, for he requires to know his enemy's sensitive spots.

Can any of these various types of behaviour properly express goodness?—and if so, which? Shand at least thinks that some of them can, for he asserts that even the highest love has its anger.

Indeed, the general opinion seems to be that anger is in itself neither good nor evil, but that it may be an important constituent in virtues as well as in vices. The Aristotelian doctrine of the Mean would apply; and goodness would consist, not in refraining from anger, but in being angry only in the right way, at the right time, for the right reasons, and with the right person. But are the impulses of anger in this respect on a level with other impulses?—and can they all be incorporated in the system of love or of respect for conscience? Shand, for instance, denies that *all* impulses are compatible with all sentiments; and he cites St. Paul as witness that not all passions can be ministers of love: "Love envieth not, vaunteth not itself, is not puffed up, doth not behave itself unseemly, seeketh not its own, is not provoked, taketh not account of evil," etc. A similar misgiving appears in Butler's account of Resentment, which is unusually cautious and hesitating even for him. "Resentment," he holds, like other "particular passions," is in itself non-moral; it acquires moral quality only in relation to the master-principles of Self-love and Conscience. Yet, like our other passions, it is implanted in us by God, and so, presumably, has its use: only its abuse will be vicious. Hence, though "a harsh and turbulent passion," it is in itself "not only innocent but a generous movement of mind." It is justified by the end it subserves; for, as things are, it is required as a

support to judicial punishment, which is a necessary social institution. Since "it is necessary for the very subsistence of the world that injury, injustice and cruelty should be punished," resentment is needed as a balance to compassion, which, by itself, would weaken too much the forces which make for righteousness. For "though it were to be wished that men were moved by a better passion," yet, human nature being what it is, too many criminals would escape justice, were it not for public resentment.

Such is the teaching of the sermon on "Resentment," but in the sermon on "Forgiveness" it is significantly modified. Here Butler argues that resentment is on a lower plane than the other natural passions. For all these may at times be gratified innocently, even apart from their main end. But resentment "is in every instance absolutely an evil in itself, because it implies producing misery"; and so it can never be gratified innocently, except "in order to produce some greater good." To act merely from resentment, then, is not only unmoral, it is definitely immoral. Here we seem to have moved some way from the description of it as "an innocent and generous movement of mind."

In spite of this hesitation, the general upshot of our appeal to authorities is clear. Anger may be the root of virtues as well as of vices. There is such a thing as "moral indignation," which is distinct in quality from private resentment. On this all the writers whom I have cited are agreed: Westermarck and McDougall, Stout and Shand, as well as Butler and Green. And they would claim that Christian teaching really supports this view. "Practically at least," says Westermarck, "Christianity has not altered the validity of the Aristotelian rule that anger admits of a defect as well as of an excess."¹ The chief difference between them is that some find the differentia of moral indignation simply in its altruistic character, while others postulate a special moral category and regard "moral indignation" as directed only against a violation of "right."

Now this difference has very important consequences. Thus, to Dr. McDougall, the moral quality of "moral indignation" is found simply in the character of the interests protected by it, and in the relation of the agent towards them. It is provoked by aggression towards others and particularly towards the helpless. Its value lies in the element of "tender emotion" it incorporates; and this has reference only to the persons on whose behalf it is felt. It may be ruthless and terrible in action; but, so far, it can be felt towards a tiger or a cobra—or, I presume, towards a microbe—as easily as towards a man. No question of responsibility arises. The exact character of the being against whom it violently reacts is irrelevant. Such a being is injured or destroyed simply as a menace to what is dear.

But this is surely an inadequate account of "moral indignation." We have here only one condition where we should have two. For such indignation implies, not only a person who feels it, but a person towards whom it is felt. It implies a judgment of condemnation, and such a judgment would be meaningless except as referring to a responsible person.

There are at least three different kinds of reaction which it is important to distinguish: (a) An individual may react resentfully towards the

¹ *Op. cit.* Vol. I, p. 78.

aggression of another individual : so far his conduct is non-moral. (b) Where a community, like the family or the State, in which its members find a moral value, is menaced by an external foe, the members may react passionately in its defence against such a foe ; and this reaction will have some moral value proportional to the value of the community defended. (c) The reaction of such a community against a rebel or traitor from within will be fundamentally different in quality to that against an external enemy. It will be the defence of a system of rights against someone who, *ex hypothesi*, is cognisant of them and under obligation to respect them. The situation derives all its meaning and its poignancy from the contrast between the treachery (with the opposition it has set up) and the old intimacy of relation. There is antagonism, but it is between those who share a common moral outlook.

Here the action taken may be different : the attitude of mind certainly will be. And it is only here that you have a truly moral indignation. Here only is punishment appropriate, and though punishment may externally resemble an act of war against a foreign foe, in moral character it is quite distinct.

Indignation, then, is the attitude of a person towards a person. It therefore implies some community of mind between agent and patient. Towards what is entirely alien and distasteful, like a disease or a snake, a man may feel *disgust*. Towards a very degraded specimen of his own race he may feel *contempt*. He will only feel *indignation* towards one whom, in some respect, he regards as an equal. In this sense, to be indignant with a man, is to pay him a compliment, for it is to take an interest in him.

Now this is true—*a fortiori*—of *moral* indignation. For this implies a judgment of condemnation. It implies sufficient community of nature between the man condemned and ourselves for us to have some insight into his mind and to be able to interpret his acts or omissions. It implies that the person whom we condemn is responsible, hence that he is capable of some discrimination and of understanding the meaning of his acts. Nor is it enough that such community of nature should once *have* existed. At least if the indignation is to be expressed in retributive punishment, it is necessary for the object punished to be a person *at the time* of punishment. Otherwise there is only a piece of make-believe, as when, after the Restoration, the body of Cromwell was hanged in chains at Tyburn.

Moral indignation derives its character from the paradox that the person with whom we are indignant is at once an enemy and an ally ; or, rather, is an enemy though an ally. It is in this contradiction that the outrage of his offence lies ; and it must dictate the appropriate reaction. In genuine moral indignation, as well as in reproach, there is always something of surprise and of protest—“ *et tu !* ”

There are, then, two different ways in which goodness may react towards wrong : (1) Whatever is less than personal can never occupy the centre of our interest. In so far as it threatens what we value, we may feel horror and loathing, we may react against it with all our might and try to stamp it out as we would a deadly disease. If it is an animal and capable of pain, we may not only withstand it to our utmost power, but we may be utterly ruthless as to any pain which we, incidentally, inflict. But we never inflict such pain for its own sake, except so far

as we mistakenly personify. This is a type of the right attitude towards sin as distinct from the sinner. (2) But any desire to hurt has meaning only towards the sinner himself. Hence if such desire is to be incorporated into a genuinely moral indignation, it must be reconciled with good will. Any want of concern on our part for another person's true welfare must be a sign of imperfection in ourselves.

We must ask, then, what sort of hurting is compatible with goodwill towards the person hurt? In this connection the argument of Plato¹ has never lost its force. It can never be the part of a just man to make another man unjust. It can never be the act of goodness intentionally to hurt another man in such a way as to lower him in the scale of human excellence. Bernard Shaw treats this principle as fatal to all retribution. "If you are to punish a man retributively," he says, "you must injure him. If you are to reform him you must improve him. And men are not improved by injuries."² Mr. Shaw's logic appears to me to be valid, except on the hypothesis that "to injure" is an equivocal term. And so it is, if it may be used for a kind of "hurting" which not only is distinct from destruction and permanent injury, but is—as in Plato's own conception of punishment—the only possible alternative to such permanent injury. This sort of hurting may, conceivably, be the truest kindness. It is, *prima facie*, the infliction of an evil, but it is a blessing in disguise; and the infliction of no other kind of evil can be morally justified. The purpose of inflicting pain must always be subordinated to the wider purpose of rescue.

(I am not here considering the legitimacy of deterrent punishment. For such punishment is only dictated by policy: it is retributive punishment only which is the natural outcome of moral indignation and in which the desire to inflict pain is central.)

I believe much of our thinking on principles is seriously confused by the necessity of compromise in ordinary practice. Human governments, it is true, have, at best, to use rough and ready makeshifts, and are compelled to study economy of effort. The spirit of knight-errantry that pursues lost sheep into the wilderness and treats returning prodigals as honoured guests is not for them. If the visible social damage is great, they must often concentrate on withstanding the wrongdoer, and postpone or neglect the immensely difficult and delicate task of reclaiming him from his wrongdoing and of persuading and helping him to change his way of life. The courts send Bottomley and Bevan to gaol, and cannot stop to consider first whether gaol gives them the best chance of moral recovery. But if prison does not help, but mars them still further, that is human wastage which may be inevitable but is none the less tragic. It is an incidental, not an intended, result. And it is only owing to our human clumsiness that we may have to act in such a way. If we were less clumsy, and if we could contemplate the criminal with the eyes of his mother or his Maker, we could hardly acquiesce so readily in any treatment of him which is so indifferent to his personal fate. Still less could we take a joy in any genuine degradation of him. The more we permit ourselves to take *him* into account, the more must indignation and its impulses be subordinated to goodwill, to love in action.

¹ *Republic*, 335.

² Preface to *English Prisons under Local Government*, by S. and B. Webb, p xiv.

But if this is so, the further question arises—Is such indignation, with its natural expressions, the *best* means towards the redemption of the wrongdoer? Consider the contrast between the two attitudes which Mr. Shand calls “Denunciation” and “Tender Reproach.”¹ In both there is an impulse to accuse. But the former is untender: it is grounded in anger. It is willingly adopted, not “grievously torn from its subject.” The latter will be evoked in us by the very same act as the former, when the guilty person is not indifferent, but is one towards whom we already feel “tender emotion.” In it, sorrow is in the ascendant, and anger, so far as it enters in, is restrained. Its chief impulse is not to injure, still less to shrink from, but to restore, its object. Towards the past misdeed its chief feeling will be—“The pity of it!” This, and not moral indignation, will be the natural attitude of a good mother towards a bad son, of Monica towards Augustine. So far, then, as we adopt the family analogy to express our ideal of personal relations, must we not say—adapting Burke—that we should approach the faults of any man as we would the wounds of a brother, with awe and trembling solicitude?

Now very many people undoubtedly feel, with Stephen and, possibly, Stout, that, even if this were good Christianity, it would still be bad ethics. They feel that indignation is active and virile, that moral indignation leads to an energetic withstand, when love is soft and ineffective, sentimental and even unprincipled. They say that the mother’s attitude belongs to the relative ethics of the sentiments rather than to the absolute ethics of conscience. Thus Aquinas² seems to concede that the attitude of the criminal’s mother may properly be different from that of the magistrate and that her partiality is amiable and innocent. But it is still partiality, and the magistrate’s attitude is the closer to the divine and eternal.

This objection is plausible, but I do not think it can be sustained. There is no reason why the energy to withstand the wrongdoer in his wrongdoing should be less in one who loves him than in a previously indifferent person. In either case, whatever energy there is, is derived from the love and the loyalty of the champion of right. The difference is that, in “tender reproach,” this love includes, and does not exclude, the wrongdoer himself. Thus it is interesting to notice that McDougall treats moral indignation and reproach as compounds of the same two primary emotions—anger and “tender emotion.” But, in moral indignation, this “tender emotion” is felt, not at all towards the wrongdoer, but only towards his victims. Yet, ideally, we ought to feel tender emotion towards all men.

Further, in the case of the good mother or friend, the recovery at which they aim is a moral recovery: it involves no compromise or lowering of standard. As Shand says, the good man does not “sympathise” with the wicked, but “pities” him. He regards his state as most miserable, and tries to convince the wicked man of a misery which the latter does not feel.

From a Christian standpoint, at any rate, the family analogy is the right one. No criticism can alter the broad impression that, in the New

¹ In the chapter on *The Sources of Tender Emotion* contributed to Dr. Stout’s *Groundwork of Psychology*.

² *Summa Theologica*, Part Two, 1st Division, Question 19, Article 10.

Testament, law and obligation, however valuable, are secondary and subordinate as compared with love. The Fatherhood of God and the brotherhood of man underlie all else. But, apart from all appeal to authority, "tender reproach" is definitely superior to moral indignation in the following ways:

(1) Even if a pure moral indignation is in principle conceivable, in practice the risk of self-deception is enormous, if not prohibitive. It is so fatally easy to indulge what are really private and sectional animosities and to feel a glow of conscious rectitude in doing so, by persuading ourselves that they are really due to public spirit, that it is almost impossible to devise any test of impartiality which ought to satisfy us. And hypocrisy is still hypocrisy, even when it is unconscious. A bitter little outburst of Prof. Gilbert Murray's, in a paper now twenty years old but recently reprinted, has a new sting in it since the European War.

"Consider the fowls of the air. A very pretty small bird, the great tit, when hungry, will lift up its beak, split open its brother's head, and proceed to eat his brains. It might then be satisfied, think you? Not at all! It has a moral nature, you must please to remember, which demands to be satisfied as well as the physical. When it has finished its brother's brains, it first gets very angry and pecks the dead body; then it flies off to a tree and exults. What is it angry with, and why does it exult? It is angry with the profound wickedness of that brother in consequence of which it was obliged to kill him: it exults in the thought of its own courage, firmness, justice, moderation, generosity and domestic sweetness. That song is its equivalent—poor innocent thing—of a patriotic leading article in the *Kreuz Zeitung* or the *Daily Telegraph*, or the *Petit Journal*."¹

(2) In indulging in moral indignation we run the risk of falling, not only into hypocrisy but, into cruelty. However necessary it may be at times to accustom ourselves to give, or at least to refrain from relieving, pain, it is difficult to doubt that we grow more callous in the process. On active service in the late war one was almost bound deliberately to practise a certain callousness, merely to preserve one's mental balance and to "carry on." Yet this was certainly blunting to some of the finest human feelings, and one was conscious of moral loss even at the time. There is an interesting passage in Macaulay's diary at the time of the Indian Mutiny, in which he records faithfully the emotions of the typical humane man. He feels all the flaming indignation which was natural towards the authors of the Cawnpore atrocities. "It is painful to be so revengeful as I feel myself. I, who cannot bear to see a beast or bird in pain, could look on without winking while Nana Sahib underwent all the tortures of Ravaillac. And these feelings are not mine alone." But still he is sufficiently master of himself to feel a misgiving. "Shall we not hold human life generally cheaper than we have done? Having brought ourselves to exult in the misery of the guilty, shall we not feel less sympathy for the sufferings of the innocent? In one sense, no doubt, in exacting a tremendous retribution we are doing our duty, and performing an act of mercy. So is Calcraft when he hangs a murderer. Yet the habit of hanging murderers is found to injure the character."²

¹ *Essays and Addresses*, p. 163.

² *Life and Letters* (Nelson's Edition), Vol. II, p. 446.

(3) But more important than either of these, because unavoidable, moral indignation, except as subordinate to love, involves an attitude of superiority and aloofness which is pharisaical and incompatible with true humility. There is something exhilarating about it, and that alone is its condemnation. "We never feel so good as when we are punishing somebody" said Mr. Russell recently;¹ and it is not long since Mr. Hobhouse was reminding us that all moral censorship has its seamy side, that it has "an anti-social element, a pursuit of the sinner, an exaltation of self, something at times of the hunting instinct, something of 'herd psychology'."² Is not to throw stones, even in imagination, tacitly to set up a claim to be without sin? And does not such a claim really indicate a more parlous condition of soul than almost any against which stones are normally thrown?

The old Stevenson jingle, which many of us learnt as children, still seems to me to state sound doctrine :

"There is so much good in the worst of us
And so much bad in the best of us,
That it ill becomes any of us
To find fault with the rest of us."

The higher way is found by those who are not careful to repudiate responsibility, but rather link themselves with the wrongdoer and ask "what can *we* do to make up and right the wrong?" A safe test, I believe, is this. Any indignation against other men must be wrong, which is more hostile or intense than what I can feel against myself. I do not think this is really deniable. But, if so, it follows that hostility can never be more than subordinate, for I cannot will unmitigated evil to myself. And, neither in my own case nor in that of others, can I rightly take joy in pain and humiliation as such. It is true that Burke speaks of the punishment of tyrants as "a noble and awful act of justice," and "consolatory to the human mind."³ But it is not the woes of tyrants in themselves but these things viewed as a witness to the power of good, in an age when good is expected to vindicate itself in some such spectacular way, that can afford satisfaction to any but a degraded mind.

The conclusion I would draw is this. Moral indignation is certainly a different thing from ordinary resentment, and nobler altogether. Mere resentment is not its ancestor but only a distant cousin, the offspring of a mésalliance. The champion, who stands forward with flashing eye and hurls his challenge "J'accuse" at the hosts of wrong, is certainly a fine fellow, but he is not the very finest. It is probably true that, if most of us became better men than we now are, we should be righteously indignant much more often than we now are. But if we became better still, I suspect that our righteous indignation would be swallowed up in something higher.

It is true that "tender reproach," which I here take as the ideal attitude, is different from mere "pity," just as moral evil is different from suffering. It contains an element of anger, though strictly subordinate, which pity does not. But this does not mean hostility to the wrongdoer

¹ In a review in *The Nation and Athenæum*, Nov. 11, 1922.

² *The Rational Good*, p. 124.

³ *Reflections on the Revolution in France* (Works, Vol. III, p. 105).

whom, *ex hypothesi*, we love. There may be horror towards the sin ; but, if this would lead us to shun the sinner, we must be prepared to curb it just as nurses and doctors have to curb their shrinking from loathsome disease. And towards the will of the wrongdoer, so far as it is set on wrong, there will be intense resistance. The true attitude is combative without hostility : the effort is to withstand, but not to injure. And all this is only subordinate to the wider purpose of redemption. Anger, however sublimated, is never fit to be " lord and dictator " of any man's soul.

Some Sex Differences and the School.

By JOHN STRONG.

I.

THE Report of the Consultative Committee on the differentiation of the curriculum for boys and girls respectively in secondary schools seems on the whole to have met with general appreciation. Without being characterised by any unexpected originality or overburdened by new ideas or suggestions, it has served an excellent purpose in bringing together a number of relevant facts and opinions and showing their bearing upon the subject. At the same time it is unfortunate that a committee of twenty-one members convened for the purpose of inquiring into one of the most important problems of modern education, ostensibly affecting boys and girls, but in reality girls much more than boys, should have contained only four women members and none of these married. Without in any way casting any reflections upon the four, to whose presence on the Committee no one would take exception, it is not difficult to understand how certain deficiencies in the report may be traceable to the lack of the element referred to. Perhaps, too, a Committee more widely constituted would have had more confidence to speak plainly where plain speaking is a virtue, and would have been more decided on matters where hesitation is undesirable.

The Board of Education, adopting their usual policy, published the report without delay, but reserved judgment in the meantime, simply stating that "they do not commit themselves to acceptance of the specific opinions and recommendations in it." If this attitude means that they are merely desirous of gaining time to consider how best the views of the Committee may be carried out, there can be no grounds for complaint. Some of the twenty-four recommendations, if carried into effect, will undoubtedly have far-reaching consequences, and no one who has the interests of education at heart need cavil at a delay which is occupied in examining more fully the bearing of these consequences.

If, on the other hand, this attitude of the Board means an indefinite postponement of the recommendations it would be unfortunate, and there will be unaffected disappointment among those who are convinced that much of the education given to girls during adolescence and even immediately beyond is far from satisfactory. No one, not even the most conservative of educationists, can with truth accuse the Consultative Committee of having put forward recommendations too drastic or too revolutionary. Most of the twenty-four recommendations, in one form or another, have been the subjects of discussion in professional circles for some time past. The three which recommend systematic inquiries into fatigue, school games for girls, and the psychological differences in girls and boys drawn from secondary schools are specially valuable suggestions.

In one particular the report will be read with some surprise. The preface states that the Committee, in considering the exact delimitation of their terms of reference, came to the conclusion that these terms "did not cover the general problems of co-education." On a strict

interpretation, no doubt, this conclusion may perhaps be justified, but an equally strict interpretation would, with equal justification, have cut out all reference, or practically all reference, to the history of the curriculum in secondary schools which occupies some forty-four pages of the 141 pages of the report. Undoubtedly much of that history, interesting and valuable as it is for many purposes, might have been omitted without invalidating the report. Curiously enough, although not a word is said about co-education *per se* in the report, there appears in the guise of an appendix a summary of all of the evidence received from co-educational schools. The inclusion of this evidence, dealing, as it does, largely with opinions for and against co-education, without comment on the part of the Committee, would seem to be far more difficult to justify than the action of the Committee in declining to consider the subject itself.

No one desires to be over-critical of a Committee which sat on 39 days and examined 72 witnesses, apart from all the work involved in sub-committees, and which spent almost a thousand pounds of public money in producing their report. But, obviously, if the question of co-education is to be reported upon at all, and undoubtedly it should be reported upon, the body to which this duty will be assigned would be ill-prepared for their task without travelling over practically the same ground which the present Committee has traversed. This being the case, is it any wonder that many will be surprised at the decision not to consider and report on co-education, and more particularly in view of the fact that evidence has been taken and presumably on the initiative of the Committee? Indeed, there is little doubt that the Committee, with a small additional expenditure of time and money, would have been in a position to make a report on the subject, and so have saved considerable time and money necessary in a future investigation.

In another particular, too, the report will be read with some surprise. Quite properly, in the introduction, two fundamental questions are raised as defining the lines upon which the inquiry should proceed: (1) What are the differences in the physical and mental powers and capacities of boys and girls? and (2) What are the different functions of boys and girls in society during school life and later? Reference will be made to the first question later on; the second calls for comment at this point. In the same introduction the proposition is laid down that "the general conception of the social functions of men and women must primarily determine the methods of education of boys and girls." While this will meet with general approval as a guiding principle, one looks in vain for its thorough-going application in the report. So far as the girls are concerned the question is disposed of in some fourteen pages or so, the larger part of which fails to show clearly or in due proportion the important issues involved in the proposition.

Much is said about those women who have to earn their own living, and properly so. The economic conditions in the past and the present are carefully examined with reference to woman's position and certain conclusions deduced. Other relevant facts are discussed. With all this, although it has reference to a minority of women only, there need be no quarrel. On the other hand, the fact that the great majority of women will not be included in this category but will marry and assume other

functions of great social significance seems to be treated not as of fundamental importance, demanding minute and careful analysis, but as something incidental or by the way. In other words, the relative importance of the two categories seems to be reversed.

It would appear to be indecorous to suggest that most of the girls will one day have children, and that there might possibly be some important relation between this fact and the girls' school curriculum. Few, if any, would ever imagine from reading the report that such a relationship constituted one of the fundamental differences between the training of boys and girls. It is to be hoped that, when next a committee is appointed to deal with any education question involving sex matters of this nature, there will be appointed to that body a much larger number of women, and, as in such questions there are many different points of view, it is important that adequate opportunity should be given for an expression of them. It would be well, therefore, that the committee should contain both married and unmarried women, all of whom need not necessarily have had experience of teaching in schools. It is satisfactory to find that one of the recommendations of the report is to the effect that women should be *adequately* represented on all committees dealing in any way with girls' education. In the body of the report it is put even more strongly. There it is stated that "the determining voice in the matter should rest, as far as possible, with women themselves." With this I suspect most men will agree.

One can scarcely conceive, for instance, a committee of married women calmly stating, as does the report, that "the training in housewifery and cookery, and even in physiology and hygiene, though it may elicit the qualities of intelligence, skill, thoroughness, unselfishness, and so forth, is not so important as the general training." In the first place they would never dream of damning with faint praise a training which is of the highest consequence to the smooth working of the home and the harmonious development of family life, while in the second place their common-sense would tell them that any training which developed the qualities of intelligence, skill, thoroughness, unselfishness, and *so forth*, was a training of a high type indeed. A "general training" which developed the qualities specified, apart from those included in the "*so forth*," would, like good wine, need no bush.

The fact is, the committee do not seem to have quite made up their minds as to the question of the curriculum for girls in relation to the possibility of marriage, and ambling round and about the question, blow hot and cold in turn. Admitted that the problem is a complicated one, this does not absolve them from giving a clear and unambiguous report. Apparently they are obsessed with the idea that "we are only on the threshold of the development of women's work and their opportunities," and seem to overlook the immensely bigger fact that most girls will become mothers, and that an education which fails to take this into adequate account fails in one of its primary functions. Long ago Herbert Spencer advocated specific training for parenthood, pointing out that some acquaintance with the first principles of physiology and the elementary truths of psychology was indispensable for the right bringing up of children; and only the other day a writer in the *Times Educational Supplement*, in an important contribution on this subject, put the case

of the mother simply and with great cogency : " The successive cares of babyhood, in an average family, fill many years of an average woman's life, and after the earliest years of each child's life she begins to be wrapped up in the problems of training and future career, and continues so for twenty to thirty years. If there had been any thought of this in her own education, it could not have narrowed her, but would have trained her in the very best sense of citizenship."

There may be different views as to the best method of training for motherhood, but there ought not to be any dubiety as to the real and vital necessity of such a training. To omit such training during the secondary school stage on the plea that some girls will not marry is to inflict an injustice on the many for the sake of the few. A general training in motherhood for all girls would inflict no injustice on any of them, since those who remain unmarried would be the better all-round citizens for their training.

Another element of surprise in the report, and one which is not unconnected with the point just considered, is the omission of any reference to the widespread opinion that the present system of girls' education is responsible, in part at least, for the increase in modern times in the proportion of the more able girls among those who remain unmarried. One would have thought that a committee inquiring into the differences between the education of boys and girls would have given careful consideration to such a point. To say the least, it can hardly be looked upon as desirable that there should be an increasing tendency for the abler girls to remain unmarried, and still less so if this is induced by the education they are receiving.

It has been argued that this tendency is one of the consequences of our social system and the disparity in population between men and women. At present in this country there is an excess of something like two millions of women over men. Obviously this means a life of celibacy for a great many women ; and is a weighty argument in favour of girls being trained to earn their own living ; but it does not account for the disproportionate increase in the number of abler girls who remain unmarried. There are other causes at work, and some of them may not be unconnected with the desire of women to demonstrate their intellectual equality with men. It is conceivable that an intellectual training of a specialised character, devoid of any of that training for motherhood desiderated above, apart altogether from the question of the desirability or otherwise of such an education, may conduce to such an end. On the other hand, it has been suggested, particularly with reference to the profession of teaching, that a process of " in-breeding " has been operating in some schools for some years past, and that the " educational cycle " which certain clever and able girls traverse in the course of their career and training is unduly weighted on the side of celibacy. This suggestion may or may not be true, but it is sufficiently disquieting as to require investigation. In addition, of course, there is the gradual opening up of the professions to women to be considered and the possibility that " bachelor " careers have their attractions for an increasing number of women.

It is not necessary to enlarge upon the eugenics of the question. All that one can profitably do here is to call attention to the importance of the question and suggest that an inquiry should be made into the

facts. It is a complicated problem, and largely so for the reason that it is not a matter which concerns the individual merely ; rather is it one which concerns the community, and, in the long run, the nation.

II.

Having now dealt with the second of the main lines of inquiry laid down by the Committee we may for the moment turn to a consideration of the first. This has reference to the question as to whether boys and girls are different in themselves and in their physical and mental powers and capacities. Up to this point the chief grounds of criticism of the report are to be found in the surprising omissions of matters of fundamental import, now we have some cause for surprise in the large inclusion of extraneous or unnecessary details. The result is that here and there important issues, when discussed in the body of the report, as distinct from the recommendation at the end of it, tend to be obscured by facts of minor importance.

Apart from this criticism, which, after all, is not a major one, the discussion of the differences of the physical and mental powers of boys and girls is distinctly illuminating and will serve an excellent purpose. With regard to the physical differences between the sexes the memorandum by Dr. Adami is a concise and masterly exposition of the subject and ought to be read by all who have anything to do with the training of boys and girls, the latter more particularly. The subjects of fatigue and exhaustion and the greater nervous excitability* of girls are most carefully considered with reference on the one hand to the existence of sexual differences in blood and the lessened amount of haemoglobin in the blood of girls after puberty ; and, on the other, to the part that calcium and its salts play in the proper functioning of the body. To whatever causes they may be due "it appears," as the report states, "to be generally recognised that girls in general are not so strong physically as boys and are more highly strung and liable to nervous strain." On the whole they are more liable to physical and mental fatigue than boys. While this expresses the prevailing opinion, the Committee very properly consider that further research should be undertaken with a view to collecting reliable data on the subject of the relative susceptibility of boys and girls to fatigue. Some pertinent observations are made as to the physical consequences of adolescence in girls "which condemn many of them to a recurring, if temporary, diminution of general mental efficiency."

Two suggestions are put forward by way of precautions for the protection of girls against undue strain and fatigue during the secondary school stage. The one supports the traditional view that school hours for girls should be shorter than for boys. The other recommends that, in the case of girls, the First School Examination should be deferred for a year. Both suggestions, if carried into effect, will meet many of the present difficulties, but not all. They will get over the difficulty in regard to the matter of home duties which fall to the lot of so many girls and from which boys are comparatively free. On the other hand they do not offer an altogether satisfactory solution of the difficulties associated with the matter of individual variations in girls in those disturbances consequent upon adolescence. Such variations often require individual consideration. They cannot be solved by procrustean methods.

Apparently some witnesses believe that the institution of parallel courses of study would be of advantage, and no doubt they would, if some simple method of transference were devised. One Headmistress, whose wide experience entitles her views to consideration, tells me that she is inclined to believe that the solution lies in the way of establishing what might be called, for the nonce, "convalescent classrooms," in girls' schools. These would be placed in charge of thoroughly competent mistresses of wide sympathies. Here, those who, from physical or other disabilities, had hopelessly fallen behind in their school studies, would have an opportunity of recuperating educationally. In practice, no doubt, it would be found that the studies might most profitably be arranged on the Dalton plan or some modification of it. Such a scheme might readily be adapted to meet the suggestion that it would be of advantage for some girls at fifteen years of age or so to be allowed to spend a year in some sort of practical work connected with the domestic arts. The particular advantage would lie, not so much in the making up of lost ground as in the fact that an opportunity would be afforded to the girls to recover confidence in their own powers which, through physical causes, had been temporarily lost. And, with renewed confidence, would return that self-respect, the loss of which so often brings about a premature withdrawal from school. On the whole it would seem that physical differences between boys and girls, as discussed in the report, do not point to any differences in the curriculum of boys and girls respectively, but rather to a difference in the rate of progress of their studies. With this, I imagine, there will be general agreement.

Turning now to the psychological differences between the sexes we find that the Committee, having made careful investigation into the available data, find that there is little difference in intellectual capacity between boys and girls, although there are noticeable divergences in emotional response as indicated by the degree of interest in various studies. Unfortunately much of the data does not deal specifically with boys and girls at the secondary school stage, and some of the experimental results cannot be accepted unreservedly. The Committee seem to be quite alive to the fact that many of the more important mental qualities are not measurable by the objective methods of experimental psychology, and that inferences based upon the results of these methods may easily lead to conclusions for which there is no real foundation.

So far, it may be said, experiments, undertaken with a view to disclosing sex-differences, have dealt with such subjects as motor capacity (tests of voluntary and involuntary movement); sensory capacity (testing powers of discrimination); powers of attention and perception; powers of description; powers of association; learning capacity; memorising; imaginative power; and the like. With one or two exceptions these tests point to little differences between the sexes. On the whole, so far as objective tests have gone, the girl appears to be, if anything, slightly superior to the boy. This approximation to intellectual equality between boys and girls is largely substantiated by the general agreement, on the whole, among witnesses "that variations in educable capacity between individual members of the same sex were probably greater than any differences between boys and girls as such." The Committee concludes, therefore, that the data available does not warrant explicit differentiation

in the education of the sexes on psychological grounds. This being the case, if there are to be differences in the curriculum as between boys and girls, they must be decided, as Mr. Burt very pertinently says, " by other than psychological considerations."

As already pointed out, it is just here that the report strikes an uncertain note, and fails to give due and proper emphasis to at least one important factor in the "other than psychological considerations." It is not sufficient to point to the absence of clear and ascertained psychological differences between the sexes and thereafter content oneself with arguing in favour of freedom in the planning of the school studies of boys and girls. Undoubtedly freedom is imperative if there is to be any real education, and, further, it is admittedly a reform long overdue in the schools. But an argument in favour of freedom cuts no ice in the determination of the *differences* between the curriculum for boys and girls. And so long as there are different social functions for men and women in human life, so long must there be corresponding differences in the training and education of boys and girls. Such differences are not incompatible with the freedom which every educationist desires. It is right and proper that all possible liberty should be given to pupils to find their bearings and follow their tastes, and that teachers should be free to aid and guide their development. With the present rigidity of the curriculum it is impossible to do this effectively, and the committee have done a good service to education by pointing this out. In view of the complaints regarding the over-loading of the curriculum in girls' schools and the alleged lack of spontaneity and initiative in consequence, the necessity for greater liberty seems to be more pronounced in the case of girls than boys. At the same time while it may freely be admitted that *bent* and *taste* ought to have more weight in determining the studies than at present, it must be recognised that they are in themselves insufficient to define the curriculum and that other factors ought to have an important share in that determination. Some of these have already been referred to.

One other point. The references and recommendations of the committee with regard to the training in æsthetics through the medium of music, drawing, and painting will be read by many with pleasure. My own experience, which includes some years in a co-educational school, has convinced me that few children are insusceptible to a training in these subjects. There will be differences, of course, in the progress made, but with the proper environment it will be made. Considering the leisure that men and women will have in after-school life, it seems a great pity that in the case of so few are proper facilities and opportunities provided for a continuous and systematic training in these subjects. The Committee and their chairman, Sir Henry Hadow, whose views are well known, deserve thanks for their timely reference to the value of æsthetics in education, and the recommendations they make. Finally, while the points raised in the criticisms in this article seem to me to be of fundamental importance, they are not meant to detract from the excellence of the report as a whole. In it there is a large amount of valuable material, to which unfortunately no reference has been possible in this brief article, but which deserves to be read and re-read by all who are interested in the education of the adolescent.

Studies in Individual Temperaments at the Caldecott Community.

BY PHYLLIS M. POTTER.

[EDITOR'S NOTE.—The Caldecott Community, founded some twelve years ago, is a remarkable example of an experiment in education, in which philanthropy and an intense interest in the individual child have been combined with the scientific spirit of investigation.

The founders and directors, Miss Potter and Miss Rendel, started with no definite theory of education, except perhaps with a conviction that children needed more careful individual study and individual treatment. Their reports, too little known, have from time to time shown how their own views were constantly developing and being modified as new facts presented themselves. There is a refreshing absence of dogmatism in their work and an open-mindedness which is the essential quality for the investigator in so complex a matter as education.

As most of our readers will be aware, the school began in the slums of St. Pancras. Its more recent developments are described in this paper, in which, at my request, Miss Potter has given a number of studies of the development of individual children. In the first part are given reports, written on individual children in 1915 after five years' knowledge of them in the school, and read at the Conference of New Ideals in Education at Oxford in 1915. These reports are given exactly as drawn up at that time, with the exception of the omission of a few sentences for the sake of brevity. In Part II Miss Potter refers to recent developments in the Community and gives her present day reports on the individuals selected, after six further years' knowledge of them.]

PART I.

REPORTS ON THE SELECTED CASES, WRITTEN IN 1915.

ROSE, *the Shrew* : Typical of the London slum, Rose, at six years of age, is undersized, with irregular features, untidy, badly fed and kept, never goes to bed before ten o'clock, is fidgety, quick-witted, unconcentrated, with a voice like the shriek of a parrot. One's first instinct is to say that proper physical conditions would very shortly remedy her defects. We ourselves hoped this, but three such periods of good conditions failed to make any impression. In the class room she is not much bother, as she is regarded by the other children with such disdain that they do not trouble to be disturbed by her. She is, however, a trial to the teacher, around whom she buzzes like a gnat, claiming perpetual attention. In fact, we believe the desire for attention to be the root of many of her vices. Seldom a day passes without some conflict, for disapprobation seems to her more tasteful than lack of attention. Yet, in spite of screaming fits and seeming irresponsibility for her own actions, she can exercise control in a moment if she so desires. However violent the screaming or kicking, in a second she can be as composed as a queen, going about as serene and radiant as possible. Yet one day, when working quietly beside the teacher in a room quiet with busy people, she looked up and said suddenly : " Seems as if I must scream."

Her remarks are always worthy of preservation ; some may throw light upon her character. " Ullo, man with no 'air on, good mornin'," she called over the banisters to a London County Council inspector upon his arrival. And another time at prayers, when the Almighty's name was mentioned, she said, in her parrot-like voice : " Oh, Miss Rowntree, do stop talking about God, it makes all me teeths ache."

ELSIE, the Normal: Elsie of seven years, is pretty, intelligent, well-fed, well-dressed, always tidy and punctual, always to be relied upon ; works diligently, though without originality ; plays as diligently as she works ; mothers the younger members of her family ; is, in fact, exceedingly efficient. In her there is no trace of neurosis or physical disease ; so far, no outstanding faults. One can almost tell to-day the charming and competent woman she will make twenty years ahead.

JOHN, the Philosopher and Student, is of Austro-German origin. His mother having had to return to Germany, he is now living with us. Previously his home had been in Euston Street—one of those unsavoury roads at the back of Euston Station—from which, I might say, most of our children come. Nothing more unlike his environment could be imagined. Of great physical beauty and mental capacity, he is at once singled out from amongst the other children. They, too, regard him as a final authority, and he is their leader by common consent.

In school-work he is practically self-taught. If one attempts to tell him anything he forestalls one by "I know," or "I read about that"—for, though but nine, he devours books. "Tales of a Grandfather," Arnold Forster's "History of England," Southey's "Life of Nelson," "Our Own Islands," of Mackinder's Elementary Studies in History and Geography, Tennyson's "Ode to the Duke of Wellington," are some of his favourites. Information, not fiction, is what he demands at present. He could not finish "The Swiss Family Robinson," for it had too much "I" in it. After having a Bible lesson on Moses, he was given Miriam's Song to read, without comment. Afterwards, Miss Rendel enquired : "Well, John, what do you think of that ?" With a little shrug of the shoulders, "It's nothing but a pride song," he answered.

Hearing another child wish that the war would stop at once so that no more soldiers would be killed, he replied : "Would you like to be governed by a nation that does not know how to let its own people be free ?"

From many children in another sphere of life, these remarks might be but echoes of adult talk ; but when one remembers that until a year ago his mother, with three children, was living on £1 a week in a London slum, and John was cleaning the room and looking after his little brother of four years, one realises what such remarks denote, and what capacity for absorbing the child has. In fact, no information is unimportant to him, all is stored and remembered and produced when necessary. He has a passion for law and order. Having completed a list of all his possessions, which was far too short to please him, he started making a list of all the things he had *not* got.

All his faults are Hunnish. He is dominant, and over-rides all who stand in his way. In nine cases out of ten his own way is a wise and legitimate way ; even if it is not, he still gets it ! Had one not seen him play with his baby sister, or seen his passion for tiny children, one would have said he had no heart. At present it does not play a very large part, but he is far too wise and understanding to omit its development as the years go by.

MARY, the Elusive: How shall I describe her? Again and again I have tried to portray her to people and always failed. To put her characteristics on to paper and make her appear real to you is more difficult still.

Being a neglected waif, I made myself responsible for her four years ago. She is now eight years old, and yet to-day I cannot tell you whether I feel she will be a big success or a big failure in life. If she fails it will be a glorious failure ; if she succeeds she will be a tremendous success. Yet even as I write this I wonder whether I am right in so thinking—one never thinks alike for two minutes on end where Mary is concerned. Perhaps, after all, it may be that the respectabilities by which she is at last surrounded will alone keep her in the straight and narrow way.

Her inability to take herself lightly makes her a constant object for taunt. Her scatter-brain, again, perpetually gets her into trouble ; while her extraordinary power of irritating and getting on people's nerves is beyond belief. But, and this is one of her many contradictions, at the same time she has the power of making you almost worship her—that is, if you don't hate her.

The number of the layers and strata of Mary's mind are as yet unknown. Again and again we think we have the key to her mind, and again and again a new stratum rolls to the surface, which shows how far we still are from knowing the whole depths of her character.

She is intelligent, deductive, clever with her fingers, very maternal, has a keen eye for beauty of form and colour, and a keen ear for singing and poetry. She is, moreover, a first-rate mimic, and is seldom more charming than when rollicking and pretending to be So-and-So. But more than a mimic, she is an actress by nature, for she has that quick intuition which sums up in a moment a situation or a character, so that she may either play up to it, or adapt herself to her own advantage. I do not mean that this power is conscious ; it is rather sub-conscious, and ever present. It is this power, I believe, that makes her self-conscious, for she is ever aware of the subtleties of situations and the place she plays (or might play) in them.

GLADYS, *the Humorist*, is six years of age, the daughter of a policeman. Full of possibilities, she is incorrigible at home. If her mother whipped her, she found her smothering her laughter under the bedclothes a minute later. Nothing in the way of scolding seems to make an impression on her. Her buoyant spirits turn the most solemn reproaches into a lighter vein, and she is never without a retort, sometimes cheeky, always witty.

The first day that she came to school she was given the inevitable beads to thread—which usually satisfies a newcomer for several days. Not so with Gladys. "When are you going to give me something else to do ? I can't live on beads, can I ?" she said appealingly.

Her concentration is fleeting. A piece of canvas-work hung about, term in, term out. At the approach of Christmas she was seized with a real desire to finish it for her mother. Strenuous efforts were made. The leader's opportunity for a moral lecture was taken away by Gladys remarking : "If only I had got on with my work before, I shouldn't be sitting here now, should I ?"

Another day she was sent to fetch a low chair. Being a long time on the errand, she was reproved for loitering. Quite unquelled she replied with sweet naïveté : "Well, yer see, this chair has very short legs ; it took a long time to get upstairs."

"What, are yer tender ?" she asked, when told that little girls didn't bang grown-up people. On seeing Miss Sellar, a Caldecott worker,

harassed one morning when all the pencils needed sharpening and the needles threading at the same moment : " Oh, Sellar's up the pole ! " she said.

The delights and difficulties of such a child in a community need not be pursued further.

Besides these temperaments, there is in the Caldecott Community the morally deficient, who steals and lies perpetually, to whom of course punishment is of no avail. There is the slackster and truant, to whom the four walls of the schoolroom, free as it is, are an abomination, but who becomes a different creature in an open country life. There is the domesticated child, and the child who only wants to draw, and many others.

What system but a fluid one could deal satisfactorily with such different qualities and defects ? Can one even be sure that consistency in the treatment of any temperament is the right thing, and, even if it were, is not the temperament of the teacher to be taken into consideration ? All adults react upon one another in various ways, and it is useless to ignore the fact of temperament in children, as though it were something acquired after adolescence. At the Caldecott Community there are teachers who, though delightful to me, react sadly upon certain children ; while my temperament is distasteful to several members of the Community, and I have had to pass them on to be taught and dealt with by another. Again, other children who have come from the hands of another teacher appear to find me quite an easy person to deal with. In fact, classification at the Caldecott Community is rather upon these lines than any others. Each room has a teacher who is supreme, and no doubt that teacher again classifies in her own mind. Recently there has been much talk of the freedom of the child, but how little of the freedom of the teacher ! If the teacher is to be at her best in teaching, she must be free to be herself. We have found again and again that our children do not resent inconsistencies of treatment—inconsistencies that an adult would resent bitterly. The tolerance of childhood, not only towards each other's faults, but towards the teacher's, is at times most marked.

PART II.

AFTER SIX AND A HALF YEARS.

In June, 1917, the Caldecott Community removed to the country and became a boarding school for working men's children, taking with it a large proportion of the Nursery School children, including Rose the Shrew, Elsie the Normal, John the Philosopher, Mary the Elusive, and Gladys the Humorist. It is with a view to tracing the developments of these temperaments after six years of healthy well-regulated life in country surroundings that this paper is undertaken. Before doing this it is necessary to state the reason for altering the basis of the Community and moving to the country, and also the principles which underlay the reorganisation of the work.

The reason for removal to the country was that although, as stated above, much could be done outwardly for these children of crowded London, it soon became evident that life in St. Pancras set very definite limits to what could be accomplished, and forbade us to hope for those

thorough-going results that we had set as our ideal. The children lacked, not books and opportunities of learning, but things more fundamental for education—such things as pure air, green fields, trees and cattle and the sight of wide spaces ; for the country is not only the source of man's health and food, but also one source of his spiritual life.

It was not sufficient, however, to have secured the beautiful old house of Charlton Court at East Sutton, with its old walled garden, farm buildings and orchards, overlooking the wide stretch of the Kentish Weald, seven miles S.W. of Maidstone. Although these made an ideal setting for an educational venture, it was also necessary before re-establishing the work, to define what attitude was to be adopted towards the problems that confronted the Director. For what life were these children to be prepared, and how could it best be achieved ? Varying so much in temperament it was impossible to conceive of them all as suited to either domestic service or clerkship. The educational outlook and the means for giving scope to the various temperaments had therefore to be sufficiently broad to minister to all temperaments. To do this with the greater opportunities that life in the country gave was not difficult, but the problem of how to give a cultured education and at the same time to fit the children for a life of toil was more difficult, until it was realised that culture, taken in the highest sense, could be common to all classes, and retained in any occupation. As Robert Louis Stevenson states : " Culture is not measured by the greatness of the field that is covered by our knowledge, but by the nicety with which we can perceive relations in that field, whether great or small."

It was this " nicety of perception " that the Community endeavoured to foster in its children. Intellectual work was not to be considered more worthy or dignified than manual labour.

Such a spirit towards work, and indeed towards life itself, could not be taught by precept only, but necessarily by doing also ; and it may be said with truth that for the last six years, work at the Caldecott Community has been done in this spirit. All honest work, whether of hand or brain, ranks equally. No slur is cast upon the child who is dull at lessons, for it is often the case that he excels in another department ; nor have the Directors lost the dignity of their position because they, in common with all other members of the staff, take their share in the house-work ; for, with the exception of a cook-housekeeper, and half a day's work from a village helper, no domestic staff is kept. It is perhaps this fact that gives the key to the principle governing the Community, which, as its name indicates, is more than a school. The school is " a porch to the house of life," a place of instruction ; whereas a Community implies joint ownership and fellowship, with all members working for the good of the society, consisting of both sexes, where work in the kitchen, the farm, the garden, are not lessons merely but labour necessary to daily life.

Under such conditions as these, Rose the Shrew, Elsie the Normal, Mary the Elusive, John the Philosopher, and Gladys the Humorist have lived for the last six years amongst forty children ranging in age from two to fifteen. Mary and John left at Christmas, 1922, and have passed on to secondary schools. Elsie, Rose, and Gladys have become prefects at the Community.

Starting in the order in which the character sketches are given in the first part of this paper, I will attempt to describe Rose the Shrew.

1.—ROSE, THE SHREW.

It is with almost triumphant joy that one records that this most difficult, most despaired-of child, has become one of the finest characters in the Community. As one has found again and again, it was not until she became adolescent that any permanent change became noticeable. Up to that time Rose was still the hot-tempered insolent child, indulging in screaming fits, so that she was known as the "mouth organ" by the other children, to whom she became, because of her unreliable temper and dishonesty, a person to be tolerated but otherwise disregarded. To the question "Who is your friend?" she replied, "Nobody, only the staff."

Yet through all this period there were signs that heralded the coming change. Her love of poetry was very pronounced, and this she would read, or get read to her, regardless of whether she understood it or not. She memorised much, although her memory for facts has never been good, and her intellectual capacity was and is poor. She was always generous to an outstanding degree.

At eleven the change came, and in a few months Rose became a conscious and controlled person. One no longer questions her honesty—her whole outlook on life is honest. Although hot of temper still, she has it sufficiently under control never to be rude, or at the most occasionally looks rude, and then a conscious effort can be seen to be made. Moreover she helps others to regain their equilibrium. Generous in the impulsive stage, her generosity in the more deliberate stage takes the form of great unselfishness; she is always obliging and helpful to others, children and staff. It was Rose who organised a band of "voluntary workers" whose object it is to offer assistance in emergencies. She no longer desires attention, has become very maternal, and is charming to babies and anyone in trouble or at a physical disadvantage; for it is the ostracised child who tends to become the tender-hearted and sympathetic. This became very apparent at a fancy dress party given at the Community, to which two little strangers were invited, who came in ordinary clothes. From the moment of their arrival Rose made herself responsible for them, refusing to dance until their programmes were full. When a promised partner was missing, Rose found a member of the staff to fill the gap before leaving to dance herself. When the valued programme was lost, Rose not only got another, but went round to past and future partners and got it correctly filled, and by the end of the evening had the two little strangers arrayed in the fancy dresses of younger members of the Community who had gone early to bed. This was a child who, at six years old, was thought the nearest approach to a lunatic that a child could be. She reacts extraordinarily well to responsibility, and loves the chance to organise, although in an emergency she is still likely to lose her head. This, and the fact that she still bites her nails and is full of terrors of the dark, are the only signs of the old neurosis left. Having won through with Rose one does not feel justified in ever despairing of the difficult and abnormal child again. The Community possesses three at the moment, with whom it struggles daily in the hope that the miracle may happen with them as it has with Rose.

2.—ELSIE, THE NORMAL.

Elsie, the normal child of seven and a half, is now the normal girl of fourteen. She is still pretty, still always tidy and punctual, and has never lost or left anything about. She still works diligently and still without originality. With many people she might pass as an intelligent child, for she shows a great deal of facile superficial interest in things, and asks endless questions on minor points, the answers to which she could easily have ascertained for herself, or which might even have been answered in the lessons themselves had she brought her intelligence to bear at the time. Her school work, although slipshod, shows no sign of laziness. Her books are neat and orderly, and the matter is seldom bad enough to be returned; but there is rarely a sign of real thought behind, and it is evident that she comes quickly to the end of her mental resources. Yet she still may be called competent, and has the power of getting an effect quickly—whether by arranging flowers tastefully in a room that she has not made thoroughly clean, or by quickly running up a dress of well chosen colour or design, the stitches of which are more than likely to be inadequate. But her power to tackle anything in the way of needlework makes her constantly sought after by others, whom she supervises and advises carefully.

Until recently Elsie was a great gossip, and it used to be said in the school that there were three ways of spreading news—by telegram, telephone, and tell-Elsie. This taunt served its purpose, for she is sensitive to being laughed at, and still weeps or retreats into a “huff” if fun is made of her.

As one looked ahead six years ago, one looks still to the time when Elsie is a woman. We see her coping with a family that she has well in hand, managing to get the effect of physical and mental correctness without the cost of the self-sacrifice that usually has to be made to that end.

3.—JOHN, THE PHILOSOPHER.

John, now $15\frac{1}{2}$ years of age, is an unknown quantity. Still physically beautiful and of good mental capacity, he is, as he always was, very silent and very reserved. No one knows the real John, although he is generally liked. From his new school, where he has taken a good place, we hear he is “liked by the boys as he has good manners and no side.” Yet he is conceited, not of his appearance (as he well might be) but of his ability. His influence is strongly felt, although he dominates rather than leads. He is always on the side of law and order, and is himself methodical and orderly. His sceptical attitude has continued since the early years when he said, “What I want to know is what’s behind the mind of the Master Mind?” He is always very critical, and has a great power of judgment, especially of other people, although there has been no sign to show that he has turned his critical faculty upon himself. His attitude to women is markedly anti-feminist. He has never been known to show any kind of enthusiasm, although he is keen on games, and spends hours working out cricket averages. At the same time he has never been known to be bored. He is extraordinarily philosophic in bearing the unpleasant, whether it be physical or mental. During a long period when he broke his arm and was incapable of dressing himself and was entirely dependent

upon others for his occupation and needs, he showed no sign of discomposure. If he is sent off to spend holidays with strangers he is equally unperturbed, although he has an obvious devotion to the Community and never wants to be away from it. At the death of his father, to whom he was devoted, the same apparent philosophic acceptance of the inevitable was shown, although henceforth every possession of his was carefully treasured. He is honest unless cornered, and then might lie to prove himself in the right, for he hates to be in the wrong and never admits it. That he is proud is very certain ; he is possibly very sensitive, and is apparently very susceptible to a straight talk. We believe him to be ambitious, but since he is good at most things one cannot tell in what direction ambition will lead him. He is very lovable, although quite unknowable. He took to school a small brass model of a tortoise, very old and very battered, about two inches long. What its history was he did not wish to reveal, and when asked why he took it, his only reply was "Dunno, just want it."

4.—MARY, THE ELUSIVE.

The six-and-a-half years that have passed since the previous description of Mary was given has seen a great change ; but it was not until she was adolescent at $12\frac{1}{2}$ that any feeling of stability was felt. Then within a few months a transformation occurred. Her nature was no longer obscure. The strata and layers of her mind were gradually revealed, and her nature, although still possessing its faults, became open, and one no longer feared that the respectabilities with which she was surrounded would alone keep her in the straight and narrow way. Domineering and managing, she was never elected by her companions to any prominent position in the school, although as a member of the House Committee that dealt with the making and re-making of the school rules and with the delinquencies of the younger children, her insight into character and her logical thinking and powers of deduction made her an invaluable member. Her mind and insight were always ahead of her moral attainment, and her fellows felt that she set them to rights too often without setting herself to rights first.

Her powers of acting increased, and at such times she lost all self-consciousness, and was able to fling herself into her part, whether one of great intensity or one of great absurdity. This power, and indeed all her artistic nature—for her capacity for handicrafts was exceptionally good—warred with her intellect. Her ambition knew no bounds, yet she was conscious that things came so easily to her that she never had to exert herself to the full, and she longed to go to some "cramming school" where the competitive element would be strong and where she would be "made to work." The facility with which she could grapple with work made it difficult not to be conceited ; and after acting to an unappreciative village audience she was heard to say, "They didn't seem to think us even anything out of the ordinary!"—and doubtless the answer that they were nothing of the sort made little impression.

There is, however, evidence from the "day-dreams" in which she indulges mostly at night, that the altruistic side of her nature is warring against the purely egotistical. In those dreams she is a member of an imaginary family. (It will be remembered that she is an orphan whom

I adopted.) Her dream father, a gentleman of leisure, is an F.R.S.; the mother plays the piano beautifully; the eldest sister is training at the Jacques Dalcroze School of Eurhythmics; the elder brother is a medical student, and she herself is still at school and plays the fiddle. (It is her ambition to excel upon this instrument.) They have a beautiful house in Devonshire and one in Westminster.

Coming from a "slum" home, it will be seen that Mary is socially ambitious, and nothing will keep her from rising in the social scale, either by her intellectual ability or by her artistic inclinations. Yet she is extraordinarily loyal to the friends of her babyhood, and still visits them regularly. It will be noticed that both her intellectual and artistic inclinations are represented by members of her dream family. She herself is still in the making, with a bias towards the artistic.

A letter written while staying with a lady with whom Mary constantly spends her holidays, at a time when the day-dreams were frequently indulged in, shows the fight between the two sides of her nature on the 'conscious plane': "When I think of it, if only I had the brains I should want to study medicine. I love acting, but I am not sure if it is only a love of school acting. What makes me think I want to be a doctor is this—hospitals seem to thrill me, and any book that tells of illnesses I read without a stop; also I am always listening and asking questions to do with medicine. I have been talking with Doctor about it, and I told her you thought extra brains are needed, but she thinks not, that energy and a love for medicine and also a love of people is what is wanted. She says she thinks I should go in for it, yet . . . I wish I had seen that acting teacher, she could then have told me if my acting phase was any good. I feel you must think me good for nothing to change so soon."

Mary passed on to a secondary school in January, 1923—not to one of the "cramming type," but one where there are girls older than herself, and the need to work is therefore felt. The impressions of the Head Mistress after a few weeks are as follows:—

"She is quite up to standard in her work, greatly appreciative of learning, hard-working, keen and ambitious. She has a very good memory, a sense of humour, and can concentrate in class, never losing anything which is said. We think she is very straightforward, and *most loyal* to the Caldecott Community. (I add this because, to me, it explains some of her ways: she loves it so, that she does not always approve of what is different here to what she was accustomed to.) She is responsive to kindness. Her faults would be an inclination to be conceited, and a little domineering with others; obstinateness (she would go on wearing a shoe which pinched her, after she had been told to wear a bedroom slipper until her foot was better); reticence about herself, although she is not shy (this when she does not feel well); narrow-mindedness about methods of teaching—for instance, she was rather annoyed at the way a certain thing in mathematics was taught here, and she said so!"

Mary finds the girls, most of whom are from wealthy homes, "just the same as the children at the Community." She has no inferiority complex.

5.—GLADYS, THE HUMORIST.

The six years that have intervened since the last account of Gladys the Humorist (now 13 years old) was written have shown little change—

less change than in any other child that has passed into our hands. Still, it may be said of her that she is full of possibilities, yet incorrigible. Home influence and school life have failed to make any impression upon her. It is not that she is bad, deficient, or intensely stupid ; she is, as she was then, simply Gladys. She is the most backward child of her age, and when asked to use her brain becomes like a mule ; but she uses her intelligence as soon as her sense of the ridiculous is called in. She is seldom interested in the teacher's line of argument, but always in side tracks of thought which are her own. The small group teaching given at the Community has made it possible for the teacher to follow these side tracks in a way that would have been impossible in a large class, and in following them, ingenious and intricate as they are, the opinion is generally held that Gladys is no fool. Yet at nothing but intricate argument does she excel. In mathematics it is the simple problems that baffle her, for she always expects a thing to be more complicated than it necessarily is, and she is always on the look-out for the abstruse. Her hands are still clumsy. Although she is anxious to become a nurse and has a passion to manage the babies and younger members of the Community, her thoughtlessness makes it impossible to entrust her with them. The most positive thing that can be said of her is that she has a great sense of justice ; yet again this is carried to such an extent that it becomes almost perverted. From her own chain of reasoning (for she will accept no one else's) she gathers her own sense of justice, and as she is extremely immature and blind, the result is often injustice to others. For hours Gladys defended herself before the House Committee, composed of five senior boys and girls and members of the staff, against a charge of going out of bounds and eating strawberries in a neighbouring farmer's field. The punishment for being out of bounds is close bounds, and this Gladys accepted ; but the further decision of the House Committee that she should pay for the strawberries and take the money to the farmer was firmly resisted. She hadn't, she said, eaten enough to make any difference : why should she pay therefore? Moreover, the farmer didn't know, so why trouble him at all? Further, the punishment for out of bounds was close bounds, and that should cover the whole offence ; the House Committee had no right to inflict a "double punishment." Although the money was paid, Gladys remained under a sense of injustice ; in fact, she lives under a continual sense of injustice, although no child in the Community holds her own so well, and Gladys has never yet been known to have come off the worst in any dispute. The love of Church and State is firmly implanted in her, and the family institution strongly upheld. It was wrong to behead Charles I, "for after all he was King and could do what he liked with his people." She is by no means kind to her younger brother, but her attitude is "I may hit him but no one else." She is devoted to her mother, but shows no consideration for her feelings. Her sense of possession is strong, and weeks before the end of term her own and her brother's things are packed up and put away for fear of their being mislaid when the time for going home arrives. At home she is found no easier than at school, where she is the most complex, though at the same time the most refreshing, character, calling for great faith on the part of the teacher, who waits hopefully in the belief that with adolescence another and as yet unknown side of Gladys' character will appear.

CONCLUSION.

The Caldecott Community itself is but a child of eleven and a half years of age ; its stability is in no way assured. Its lack of funds has hampered its growth, as it has hampered the growth of many of its children. At the moment of writing it is faced with the fact that it may have to close at the end of July, unless further funds are forthcoming. The sentiment of the public can easily be aroused, but it is less easy to arouse sympathy, and it is the latter that the Community needs to-day—sympathy not for the youth lacking or maimed, but for Youth itself, which, pent up in overcrowded cities, not only harms and destroys itself, but makes the city an unfit habitation for the next generation. It may be that the time is not yet ripe for boarding schools for working men's children ; but even so, the Community will not have lived in vain, since it has sent its forty normal, shrewish, humorous and philosophic boys and girls upon a freer and happier way in life.

An Experimental Enquiry Into School and Industrial Ability.

By HENRY BINNS AND WILLIAM MACPHERSON.

I.

THE following article deals with one of a series of experiments which had for its object the comparison, by psychological and statistical methods, of the intellectual and practical abilities of boys, with a view to gaining a more precise knowledge as to the extent to which the curriculum in various types of school is adapted to the development of industrial ability.

The experiments were organised and conducted by the first-named of the writers, who is chairman of the Bradford Textile Society and has had a long connection with the wool trade in Bradford. The educational side of the research has been under the supervision of the second-named of the writers, Inspector of Schools to the Bradford Education Committee. The problem has been considered, therefore, from the standpoint of both industry and the school. The writers have received much valuable assistance, especially in the examination and revision of the statistics, from G. H. Pickford, B.A., Chief Administrative Officer for Higher Education in Bradford.

The tests consisted of : (1) an "Instructions" Test ; (2) a "Cancellation" Test ; (3) two Manipulative Tests of moderate difficulty ; and (4) two Manipulative Tests of greater difficulty. The basis of selection of the tests was their suitability for the measurement of certain abilities considered likely to be useful to those following industrial occupations.

(1). The "Instructions" Test was one of those used by the American Psychological Association during the war for the purpose of selecting men suitable for the work of the Air Service. The following extract indicates the nature of the test :—" Write any letter except G just after this comma, and then write 'No' if two times five are ten . . ." etc., etc.*

In this and all the succeeding tests, time, as well as accuracy, was taken into consideration in the marking.

(2). In the "Cancellation" Test the numerals 6, 9, and 0 had to be selected from a sheet of figures and cancelled by means of a horizontal, a perpendicular, and a circular marking respectively.

(3) and (4). For the Manipulative Tests four original "Form Boards" were specially made from heavy cardboard 14in. by 7in. From each of the boards ten irregular pieces had been cut out and placed in an envelope. The boys were instructed to fit the unknown pieces into the Form Board at a given signal. The tests were devised with a view to indicating two types of ability :—(a) the ability to note an impossible solution to the problem of fitting the right piece in the right place and to select a method more likely to lead to a correct solution ; (b) the ability to concentrate on a problem requiring some elements of constructive thought.

* *V. Vocational Psychology*, by A. L. Hollingworth, pp. 296-7 (D. Appleton and Co., London.)

SCHOOL AND INDUSTRIAL ABILITY

Thirteen schools, of which all except one are in Bradford or its immediate neighbourhood, were selected for comparison :—

- (A, B, and C) Three Elementary Schools in poorer districts.
- (D) One "Industrial" Boarding School attended by boys placed at a disadvantage by unsatisfactory heredity and home-environment.
- (E, F, and G) Three Elementary Council Schools in good working-class districts.
- (H) One Central Council School in a good working-class district.
- (J, K, and L) Three Secondary Schools to which only pupils who have passed the Education Committee's Scholarship Examination are admitted.
- (M) One Secondary Boarding School in Essex, attended by boys who are not required to pass any Entrance or Scholarship Examination.
- (N) One Higher Elementary Boarding School where 50 per cent. of the School time is devoted to handwork.

In the Elementary Schools the boys tested were taken from Standards V, VI, and VII, and in the Secondary Schools from Forms III Remove, IIIA, IIIC, and IID. The ages of the 312 boys tested ranged from 12 to 14, the average age being 13 years 3 months. Since the correlation between the results obtained by the older and the younger pupils was found to be extremely high, and since age is not taken into account in class-work or examinations, the final percentages were calculated without regard to age. Twenty-four boys in each school were examined, and the following table indicates the average percentages obtained in all the tests by each group of 24 in the various schools :—

Schools.	Average Percentages.		
(A) Elementary School in Poorer district	31	
(B) Do. do.	39	
(C) Do. do.	41	} 36
(D) Industrial School with approximately the same environment and type of heredity	33	
(E) Elementary School in good working-class district	44	
(F) Do. do.	44	} 44.5
(G) Do. do.	46	} 44
(H) Central School	44	
(J) Secondary School	47	
(K) Do.	49	} 48
(L) Do.	49	} 48
(M) Secondary Boarding School	48	
(N) Higher Elementary Boarding School with 50 per cent. Handwork	55	

The figures given above show that the Elementary Schools in poorer districts, and the Industrial School, attended by pupils whose heredity and home environment are in many cases unsatisfactory, obtained the

lowest averages in the tests, that there was an increase of marks in the better-class Elementary and Central Group, and a further increase in the Secondary group of Schools, and that the highest averages were gained by the Higher Elementary Boarding School with 50 per cent. Handwork. The difference in the averages of the Elementary and the Secondary Schools is not so great as might have been expected in view of the opportunities for higher instruction afforded by the Secondary Schools, while, on the other hand, the results gained in the Higher Elementary Boarding School are better than the purely intellectual status of the school would suggest.¹

III.

With a view to determining the relationship between the tests under discussion and other intelligence tests not specifically intended to gauge industrial ability, the correlations between the former and a group of intelligence tests set along with the Bradford Education Committee's Scholarship Examinations in English and Arithmetic were afterwards worked out. These Scholarship Intelligence Tests consisted of : (1) an "Analogies" Test ; (2) crossing out the "extra" number in such successions of numbers as 6, 2, 8, 7, 4 ; (3) Completion of story by filling in omitted words ; (4) Reasoning Tests. After the tests described in Section I had been given in the four Secondary Schools the Scholarship Intelligence Tests were set in these schools to the same pupils as had done the other tests. As time had played an important part in the latter it was taken into consideration also in the Scholarship Intelligence Tests. The correlation between the two groups of tests was found to be as follows :—

The correlation between the results of the Scholarship Intelligence Tests and those of the ordinary School Examinations was also worked out, and was found to be .59 (or, including time, .58).

The correlations therefore showed that there was only a slight relationship (.16) between the final results of the Scholarship Intelligence Tests and the tests under discussion, and also between the Scholarship Tests and the Form Board Tests (.13); that there was a moderate agreement (.38) between the Scholarship Intelligence Tests and the "Follow Instructions" Test; and that there was no agreement between the Scholarship Tests and the Cancellation Test (-.02). The results

¹ Cf. the results obtained by Cyril Burt in his investigation among Preparatory School boys and Elementary School boys: "Experimental Tests of General Intelligence," *Brit. Journ. of Psych.*, Vol. III.

generally indicate that certain abilities measured by the tests under discussion — e.g., ability in intelligent manipulation by the hands, guided by visual perception—were not measured by the Scholarship Intelligence Tests. On the other hand, the high correlation (.59) between the Scholarship Intelligence Tests and the ordinary school examinations seems to lead to the conclusion that the abilities tested by the former were similar to those tested by the latter. This conclusion is in agreement with the result of other experiments that have been made in London and elsewhere with a view to finding the extent to which the results of Scholarship Examinations and Intelligence Tests agree, and supports the view that Intelligence Tests may conveniently be used to take the place of, confirm, or supplement the ordinary type of Scholarship Examination.

III.

A further enquiry was made into the relationship between the grading of the pupils according to the first set of tests and their grading according to the ordinary school examinations. Each Headmaster was invited to grade the boys according to their ability as shown in the ordinary examinations. The resulting correlations (calculated by Spearman's formula) between the School examinations and the tests under discussion were found to be as follows :—

(A)	Poorer District Elementary	....	....	....	....	.77
(B)	Ditto	....	....	....	....	.23
(C)	Ditto	....	....	....	....	.49
(D)	Industrial	....	....	....	....	.37
<hr/>						
Average						.47
<hr/>						
(E)	Good Elementary	....	....	....	....	.16
(F)	Ditto	....	....	....	....	.60
(G)	Ditto	....	....	....	....	.31
(H)	Central	....	....	....	....	.46
<hr/>						
Average						.38
<hr/>						
(J)	Secondary Day	....	....	....	....	.08
(K)	Ditto	....	....	....	....	.52
(L)	Ditto	....	....	....	....	.21
(M)	Secondary Boarding	..	....	....	....	.62
<hr/>						
Average						.21
<hr/>						
(N)	Higher Elementary Boarding	....	....	....	....	.05

These figures are very irregular, yet on the whole they suggest that the results of the tests tend to disagree with the results of the School Examinations more widely in the Schools where the intellectual training given is more advanced: thus the average correlation in the poorer Elementary Schools and the Industrial School was .47, in the Central and good Elementary Schools .38, and in the Secondary Schools .21. This does not imply that the abilities tested by the examinations are not

desirable, but rather that certain other industrial abilities are not tested by them, and it must be remembered, too, that the relationship of the tests to industrial abilities is incomplete, just as that of high ability in schools to successful achievement in after-life is incomplete.

A striking feature of the correlations obtained in the four Secondary Schools is that in two of the schools the correlation is high, while in the other two it is negative. In connection with this circumstance, certain characteristic features of the curriculum in the several schools should be borne in mind. Thus (M) (correlation .62) is a Boarding School where an all-round development of the faculties (including hand and eye training) is aimed at, and where a deliberate effort is made to correlate educational methods with the needs of later life. In the case of school (K), again, (correlation .52), the Headmaster is strongly of the opinion that intellectual ability and practical ability should both be developed, and he has therefore given a prominent place in the curriculum to handwork of various kinds. In school (J), on the other hand (correlation -.08), the curriculum is confined almost entirely to book-work; while the low correlation (-.21) in school (L) may be due to the fact that twelve of the boys tested had devoted practically all their school-time to book-work and gained low marks in the tests; it is a significant fact that the remaining twelve boys tested in this school had spent six out of thirty-five hours per week in wood and metal work, and that in the final grading for the tests nine of these boys were in the first twelve places.

In the Higher Elementary School (N), where 50 per cent. of the curriculum is devoted to handwork, and where, in view of the other results obtained, the correlation between the tests and the school examinations might have been expected to be high, the low correlation of .05 was recorded. It was afterwards found, however, that in the school examinations less than 20 per cent. of the possible marks were given to handwork, so that proficiency in manual ability, while receiving due recognition in the marks awarded for the tests, affected the examination results to only a small extent.

IV.

The results of the tests indicated, as was to be expected, various types of ability or disability in the candidates examined. The following four types may be mentioned here, with the proviso that no hard-and-fast distinction can be drawn between them, since they tend to merge into one another without any defined limit:—

- (1) All-round ability, intellectual and manual. Boys endowed with such ability are distinct assets in industry, and as a rule receive rapid promotion.
- (2) Intellectual ability, showing itself in most school subjects, with no strong leaning to manual work. Boys possessing this type of ability are likely to be successful in one of the professions or in clerical employment.
- (3) Manual ability, unsuccessful in school subjects, but frequently "making good" in industrial occupations.
- (4) All-round disability, classed as "backward" and "defective" in school and unfit for skilled work afterwards.

The following illustration of the four types may be given from (K)

Secondary School, where all the boys entered by way of the usual Scholarship examination :—

GRADING OUT OF 24 BOYS.

	Tests described in Section I.	Scholarship Intelligence Tests.	School Examinations.
(1) All-round boy	1st	1st	1st
(2) Intellectual-bias boy	19th	7th	8th
(3) Manual-bias boy	4th	22nd	20th
(4) Backward boy....	23rd	21st	19th

The all-round boy did well, and the generally backward boy did badly in all three tests—in those described in Section I, which were planned with a view to measuring manual as well as intellectual ability, as well as in the Scholarship Intelligence Tests and the School Examinations, success in which depended almost exclusively on intellectual ability. A significant contrast is provided by the positions held by the “intellectual bias” boy (19th), and the “manual bias” boy (4th), in the tests which aimed at measuring practical as well as intellectual ability; and another contrast appears in the positions gained by these boys in the Scholarship Intelligence Tests and the School Examinations. It will be observed that the places gained by each of the four boys in the Scholarship Intelligence Tests corresponded very nearly to the places gained by each in the School Examinations.

V.

The *general conclusions* indicated by the enquiries described in the preceding Sections can be stated only tentatively and suggestively, in view both of the nature of the tests and the comparatively small number of boys examined. The figures and correlations given above seem to point, however, to the following generalisations :—

Neither the usual type of Scholarship Examination in English and Arithmetic, nor the ordinary class examinations in the types of school dealt with, test such sensory discrimination and manipulative ability as are required for success in the more practical tests under discussion. They tend to measure more exclusively intellectual abilities. Since, however, education at this early stage should aim at the cultivation of all-round ability, practical as well as intellectual, the question arises whether tests of the kind under discussion, involving sensory discrimination and manual ability might not usefully form a part of the Scholarship Examination for admission to Secondary Schools, or to certain types of Secondary School. It seems to be doubtful whether, under the present system of scholarship examination, elementary school children well endowed with practical ability and fitted for success in industry are provided with sufficient opportunities for education beyond the elementary stage. Hitherto there has probably been a general tendency to refuse to give due recognition to various types of sensory discrimination and

manual ability as necessary factors in all-round ability, and this omission may have led to the complaints sometimes heard from industrial employers that the training given in schools does not sufficiently develop in the pupils the qualities requisite for success in productive industry. The curriculum of every school should provide adequate opportunities for the development of practical as well as of intellectual abilities, and it may be especially important that this should be kept in view in industrial cities like Bradford. In a paper published recently in the *Journal of the National Institute of Industrial Psychology*,* written by one of the present writers in collaboration with Mr. Cyril Burt, an experiment is described which had for its aim "the analysis of certain industrial abilities connected with the wool trade, and the comparison of these abilities with such natural capacities and educational requirements as can be most easily tested." Some of the conclusions suggested by this experiment agree closely with the inferences to be drawn from the figures and correlations given in the preceding sections of this paper. In the worsted trade much must depend upon delicacy of discrimination in dealing with simple sensory or perceptual qualities—*e.g.*, of sight and touch—and the woollen trade is by no means the only industry to which this statement applies. The question arises, therefore, whether it would not be possible, during the period of school education, to keep alive and develop, by special training, more fully than has been customary hitherto, the delicacy of the senses and manual dexterity. This could probably be done incidentally, without any material modification of the curriculum as it now exists, in connection with the teaching of the present subjects in the curriculum.

* Vol. I, No. 3—*A Comparison of Judgments in the Evaluation of Cloths*,
by Henry Binns and Cyril Burt, M.A.

The Bearing of Psychology on the Teaching of Elementary Mathematics.

BY MARJORIE HAMMOND.

WHEN I was a child I was very much puzzled by the curious incantation "AB is to CD, as EF is to GH"; what meaning could there be in "is to, as, is to"? My friend, with a turn for English, thought it bad grammar and lost many marks for refusal to repeat it! Years before I had learnt that £1 6s. 8d. = $\frac{1\frac{1}{3}}{2\frac{1}{4}}$ of £2 5s. 0d.; but that came in vulgar fractions, and in Arithmetic, not in Geometry; in Arithmetic, too, I had learnt proportion by the unitary method, but that was quite different; in my cradle I had learnt to count my four fingers and the four corners of the room, but babies do that; somewhere in schooldays I had watched the science mistress find specific gravities, but it came in Physics, so how could that have anything to do with the "is to, as" problem? Some years later I met the tangent and the sine, and later still the differential coefficient, but by that time the glamour of wonderment had left me, and "is to, as" had become a habit.

The vivid remembrance of this bewilderment, added to the later experience of teaching mathematics myself, and of hearing others teach them, has brought home to me the great importance of bringing our knowledge of psychology to bear on the teaching of mathematics.

The learning of any subject involves not only mental abilities specific to that subject, but also mental processes common to all learning. The object of this paper is to show how an understanding of the latter can help the teacher of mathematics. There are other problems in connection with the teaching of the subject at least of equal importance; what, for example, are the abilities specific to the learning of mathematics? How can they be tested? What degree of correlation exists between them and other abilities? What part do these abilities play in the different mathematical processes? Can they be trained? Does Group Psychology help us to determine the relative places of class and of individual teaching? None of these problems, important as they are, will come into the scope of this paper.¹

Psychologists agree in the main, however different their standpoints, that the process of learning, beyond the mere achievement of skill, demands first of all in the learner a certain "set" or disposition for the

¹ For general discussion of some of the problems see:—

Psychology of Number: McLellan and Dewey.

Psychology of the High School Subjects: C. H. Judd.

Psychology of the Common Branches: F. N. Freeman.

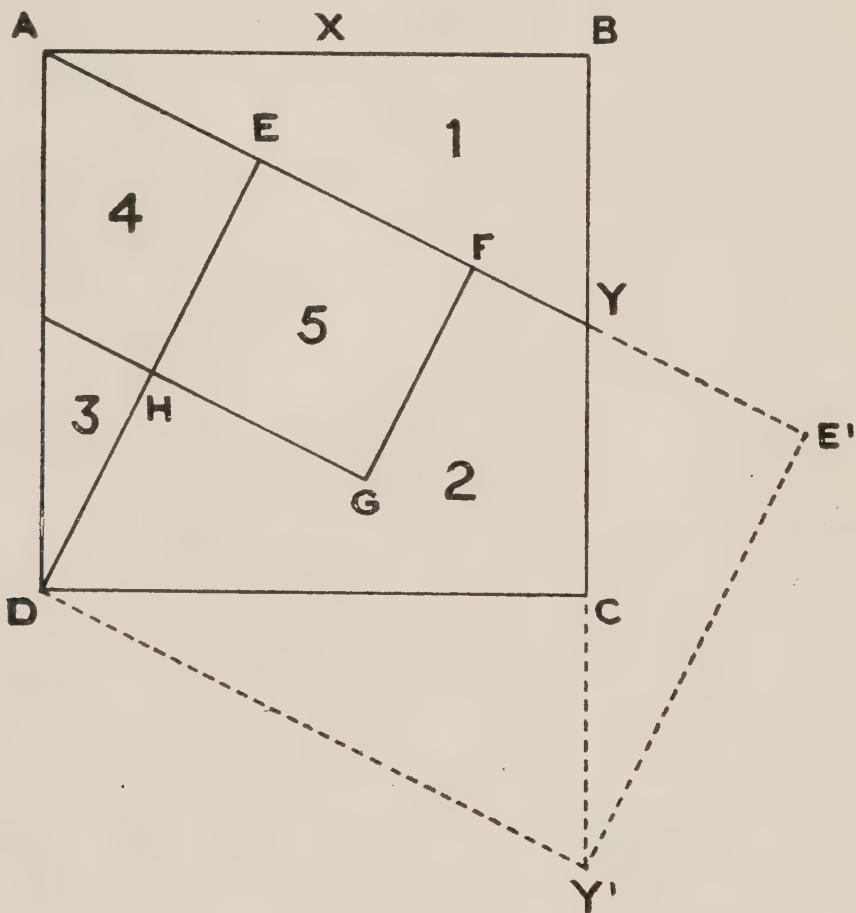
Tests of Mathematical Ability and their Prognostic Value: Agnes Rogers (Teachers' College, Columbia University).

Psychology of the Simple Arithmetical Processes: C. E. Browne (*American Journal of Psychology*, Vol. 17, 1906).

Psychology of Number: R. C. Moore (*Journal of Experimental Pedagogy*, June, 1918).

Problems in the Scientific Study of the Teaching of Arithmetic: C. W. Stone (*Journal of Educational Psychology*, Vol. IV, 1913).

subject—in other words, the learner cares to learn ; he must, moreover, go through an experimental period, in the course of which a working acquaintance with the content of the subject is achieved, certain habitual connections are formed, certain significant aspects of the subject emerge ; finally he reaps the fruits of his previous experiences, and according to the degree of his ability, is free to interpret his subject by the aid of concepts reached in his previous dealings. An example will make this clearer, it will be taken from the field of Geometry, though what I have said applies, I believe, to any learning. A young child fits together a jig-saw puzzle by the mere trial and error method, unguided by ideas of spatial relations, the older child will definitely sort out shapes that appear to fit the spaces, he gets trained to see the correspondence between capes and bays in the pieces before him, whereas the adolescent may use his knowledge of some of Euclid's propositions to solve his puzzle. A geometrical puzzle that appeared in one of our monthly magazines some time ago lends itself to the illustration of each one of these three methods. It runs as follows :—“A B C D is a square, and A B, B C, C D, D A are bisected and points are joined as indicated in the diagram below. Out of the five figures obtained are to be made a rectangle, a right-angled triangle, a rhombus, and a cross.”



The puzzle affords opportunity for learning to bisect a line ; it gives training in the perception of some of the common geometrical forms—namely, the rhombus, the right-angled triangle, the rectangle, the trapezium, the polygon with a re-entrant angle, and the square. (This is a necessary training, for part of the weakness in a beginner's geometry is, I believe, space-blindness.) This puzzle finally gives exercises in deductive

reasoning, when later the child reaches that stage ; for example, to take the case only of making the rectangle :—E F G H can be proved to be a square, the triangle A B Y can be shown to fit in the position D C Y¹, similarly the triangle A E D can fit in the position Y Y¹ E¹ (EE¹, YY¹ being proved "straight lines"), hence E E¹ Y¹ D can be proved to be a rectangle. So after all deductive geometry can, to the child's surprise, be put to some use !

It is necessary to our purpose to consider something of what has been said by psychologists concerning the building up of "sets"¹ or dispositions, the making of connections or mental habits and the development and manipulation of concepts. No school of thought can give, I think, a satisfactory explanation for everything that appears in our mental life. One school may find interpretation in "nervous integrations,"² others in "mental dispositions,"³ but it is comforting that the explanation from either standpoint comes to much the same in the end for the purpose of application ; one thing is clear at least, though in practical teaching the truth is seldom enough applied, that dispositions, habits, and concepts cannot be achieved in a day, but have their roots in previously made mental (or if it be preferred, nervous) connections.

The disposition or "set," to consider that first, seems to involve cognitive as well as conative elements—in other words, ideas and interest-tensions, which attract or repel the object of the disposition. Though much that went to make the "set" or disposition will be forgotten, it is rather of the nature of the sentiment than of the complex, since to use the late Dr. Rivers' distinction, the disposition is a result of "fusion" rather than of "suppression."⁴ So far as suppression has occurred, because of associated painful experiences, it will tend to produce a "set" against further learning of subjects touching the complex. There appears to be some contention between psychologists of the present day concerning the value of the concept of the unconscious.⁵ It is, however, only necessary for the matter in hand to maintain that, whatever we may think about the unconscious, somehow or other ideas and emotions experienced in the past, though not necessarily available to memory, still live ; their function is to colour and to interpret the experiences of the moment. Still another fact is indisputable, whatever the theory that may account for it : somehow it happens that remembrance of a thing forgotten, or solutions of puzzling problems, sometimes occur to the mind after it has rested for a while from what seemed fruitless struggles.⁶

All this has far-reaching bearings on the teaching of school subjects in general and of school mathematics in particular. For example, the

References see :—

¹ Educational Psychology, Vol. II, ch. I-IV : E. L. Thorndike.

² Psychology from the Standpoint of a Behaviourist : J. B. Watson.

³ Psychological Principles : James Ward. Manual of Psychology : G. F. Stout.

⁴ Instinct and the Unconscious : W. H. R. Rivers.

Also

The Relations of Complex and Sentiment : W. H. R. Rivers (A contribution to the Symposium prepared for the Meeting of the British Psychological Society in Manchester, July, 1922.)

⁵ Various Meanings of the Term "Unconscious" : by C. D. Broad (*Aristotelean Society Proceedings*, April, 1923).

⁶ An illustration of this is given in "A Case of Somnambulism," by S. M. Haggard (*The British Journal of Psychology*, Vol. XI, part 3).

practice of setting a problem in geometry or algebra on Monday for homework, expecting it to be produced on Wednesday (or even on Tuesday), provides time only for the mind's first struggle with the difficulties, but not enough for the quiescent period so productive of solution. Experience shows that much improvement can be effected in the quality of work by giving ample notice of it beforehand. Another very common practice is to teach mathematics quite regardless of the children's interests and mental development, thus dispositions adverse to further study tend to be set up ; still more is it likely to be the case if, in the earlier stages, the subject has been pressed on the child in the raucous tones of an overwrought teacher concentrated on what, I believe, is described as the " sharpening up " process ; this way lies the complex subversive to further progress. It is quite possible to teach mathematics so that the subject may rank high in the pupil's favour.¹ For example, the formal and analytic examination of space may nauseate a young child, but let her make doll's house furniture involving rectangles and triangles, using a right angle paper gauge made by herself, and she will be happy as a queen, and will incidentally learn that you get right angles by making adjacent angles equal (for has she not made her own gauge ?), that you get isosceles, and equilateral triangles by using the compass in certain ways and, if indeed she did not realise it before from the four walls of the room in which she lives, that rectangles have opposite sides equal, and all four angles right angles. A boy may be bored by learning geometry constructions *in vacuo*, as it were, and as a formal exercise, and moreover his boredom may set up a disposition adverse to geometry, but let him make a puzzle (involving the constructions), and if possible in his off time put him in the way of cutting it out with a fret saw and making a Christmas present of it—then he will be all attention, school will have some connection with things that matter, and, what is best, teacher and child are happy and keen.

Why cannot the puzzle interest of children be made more use of in the teaching of arithmetic ? The lesson on L.C.M. would be enlivened by a puzzle such as " Find a number which, if divided by 2, 3, 4, 5, 6, leaves a remainder 1, but if divided by 7 leaves no remainder," and incidentally the solution would throw light on the meaning of the rule.

When the data for mathematical exercises are collected by the children themselves, interest in the work is certainly increased. Children over a period of weeks should be encouraged to collect statistics of rainfall, temperature, school attendances, birth, death, and sickness rates, rates of exchange, the price of stock, prices of foodstuffs, and any other material from real life that can be used in the arithmetic lessons. Bluebooks, Municipal Reports, Insurance Schemes, Whitaker's Almanac, The *Daily Mail* Year Book, price lists, the business columns of the newspapers, and, to come inside the school, the laboratory itself, provide far better material for sums than the school text book, because it is real material and shows that sums have some use. I remember teaching, successfully

¹ For the place of Mathematics in the pupils' favour compared with other subjects, see " Popular and Unpopular School Subjects " : E. O. Lewis (*Journal of Experimental Pedagogy*, Vol. II).

² See " Study of Puzzles, with Special Reference to the Psychology of Mental Adaptation," by E. H. Lindley (*American Journal of Psychology*, Vol. VIII).

I thought, compound proportion to a class of intelligent children, but I was chidden by the science mistress because in the laboratory they could not work out by compound proportion their solution to heat problems, data for which they themselves had collected. In future the children brought to their arithmetic lesson the data collected in the physics laboratory, and discovered that after all rules like proportion have some reference to matters outside the arithmetic text book and lesson period. Text books are mainly useful for drill purposes, and more than one text book should be available in the class room. No text book should determine either the order of teaching or the syllabus of work.

In attempting to teach a new subject one can only rely on the pupil's reading meaning into it, if in the course of previous education the child has achieved significant background wherefrom to draw the meaning ; both teacher and taught are relieved of much strain when this is recognised. On one occasion an intelligent child of eleven refused to believe that a cylindrical measuring jar could show volume because, she said, " You cannot fit cubes into it." Had she in her previous education been encouraged to empty sand (or water) from irregularly shaped jars into rectilineal boxes and to deduce, by filling the latter with cubes, the volume of the irregular jar, her mind would have attached sufficient significance to the word volume to interpret the new situation. We are apt to teach volume and area in arithmetic as if our environment contained nothing but boxes and rectangles ! Another child I remember, less intelligent, insisted on pointing in front of her to find the north, " because," she said, " when you look at a map, north is always on the top of the page " ! Had she gone through an experimental period, finding the north from sun and shadows, there would have been something in her mind wherewith to refute the error and to reach the truth. Consciousness of contradiction produces mental uneasiness and a dissatisfaction that is apt to produce a mental set inimical to the subject. Another illustration of our neglect of previous background is the way we introduce new matter such as geometry without having given previous training in space perception, or the way we give a first lesson in algebra on " the rule of signs," or a lesson on the " differential coefficient," relying on a vacant mind to supply the wherewithal for interpretation. Such teachers possess a faith that surpasses the faith of the disciples of Coué !

Let the child connect the subject he learns with happy experiences, then he may come to love it for itself.¹

The making of connections or mental habits is our next subject. Every branch of learning necessitates a certain amount of learning by rote. For example, the number combinations, the working of rule-sums, the enunciation of geometrical theorems, the manipulation of rule and compass. Stated in general terms, repetition of specific behaviour coupled with satisfaction at its results are the conditions favourable to habit formation. Habits of skill, and the habits enumerated above are of that order, are acquired by a process which does not seem continuous, but appears as a series of forward jerks or leaps ; first comes improvement, then a period of no progress and possible lapse, then further improvement and so on. The points of importance here are that the feeling of satis-

¹ See MacDougall's " Social Psychology " on the development of the Sentiment.

faction for a result obtained somehow fixes the habit, and also that progress is not uniform.¹ Teachers too frequently neglect these points, they tend to bestow more lavishly blame than praise, though the latter be justly earned ; moreover the harassed teacher sometimes fails to let the child know whether or not he has been successful. When a child's progress seems to be at a standstill (without slacking on his part) it is well for the teacher to remember that progress appears intermittently. Thus both he and his pupil will be encouraged.

It has been said, and said justly, that teachers in their efforts to make the mathematical rules appear more rational to the child have concentrated too much upon problems concealed in amazing verbiage, and have neglected the drill necessary for the acquirement of number habits ;² indeed, it is true, "we teachers babble, and our scholars follow our example!"³ At the end of all the talk the teacher puts up the sum on the blackboard and (as a schoolgirl has just described it to me) rubs it out and then puts up another, and then the bell rings and three sums of the kind are set for homework.

To meet this criticism there is at present a tendency to return to the old practice of teaching rule sums before problems; that is, to provide the instrument before need for it has arisen. I believe the view that the rule should be taught before its need has arisen is false ; the immature mind at any rate does not naturally work in that way, and if it is forced to some semblance of such learning it fails to employ the rule when need arises. I remember as a child it was a revelation to me, after having for some time struggled with the difficulties of laying out a tennis court, that I could use, by the help of string and peg, Euclid's construction for a right angle, a construction which I could certainly have written out correctly in the schoolroom. The history of human learning, and in particular the history of mathematics, shows that when there is a felt need for knowledge that knowledge is sought, and not till then. It is false economy first to teach the rule and then its use—such procedure leads to the state of mind of a promising classic who said in a last mathematical lesson before sitting for his "Little Go," "Yes, I think, thanks to you, I understand algebra now except one thing, what is the value of x ?" If in the beginning of his course he had fashioned his own formulæ and equations from real data, had guessed the solution of his equations without any explicit knowledge of the rules and so come by the rules, he would never have needed to ask the question ; he would then have been prepared to enter upon a period of drill in equation solving according to the rules his own experiments had distinguished.⁴

The ordinary teaching of differential calculus illustrates the practice of teaching the rule before its application. A glance over a much used text book on the Differential Calculus for Beginners shows how this

¹ Educational Psychology, Vol. II : E. L. Thorndike.
and

Education : Its Data and First Principles (ch. XIII) : T. P. Nunn.

² Norms of Performance in the Fundamental Processes of Arithmetic, with suggestions for their improvement : P. B. Ballard (*Journal of Experimental Pedagogy*, March, 1915).

³ Emile (Book III) : J. J. Rousseau.

⁴ For sound methods of teaching Algebra see "The Teaching of Algebra (including Trigonometry)," by T. P. Nunn.

subject is usually taught. First of all we have a row of definitions ending in the definition of the differential coefficient, then follow rules for finding $\frac{dy}{dx}$ when $y=x^4$ or $\sin x$. At that point the wretched student, if courageous and intelligent, will cry out "But what is it all for?" He has to wade through some 200 pages before his text-book (or his lecture notes) allows him to find out! Why should a beginner wait till he tackles Dynamics of a Particle before he learns that if $v=u+f t=\frac{ds}{dt}$, therefore $s=u t + \frac{1}{2} f t^2 + c$? This and other real uses of the calculus, such as the finding of maximum and minimum values of given functions, or the finding of rates of increase, should come, and can come, in the earliest lessons.

I do not wish, in spite of what I have said, to minimize the importance of drill in learning mathematics—comparison of the results obtained from teaching arithmetic with and without practice in working the rules is sufficient to emphasize the need for ample drill.¹

To know the how and the why of a thing does not of necessity carry with it the power to do that thing.² But rational methods of teaching do not necessitate neglect of drill. For example, inverse proportion taught by ratio method can be understood with little waste of time in verbal explanation if the teacher helps himself by dramatic methods. Let the children stand up for horses, and let them pretend that the cupboard is full of hay, then it is quickly seen that if 7 horses finish the hay in 4 days, 3 horses will take about double as long (or, more precisely; $2\frac{1}{3}$ times 4 days). Division of a fraction by a fraction is not easy to teach by rational methods. Children of about twelve years old can however appreciate the following argument:—

If $3\frac{1}{2}$ yds. cost 15s., then 1 yd. will cost $15s. \div 3\frac{1}{2}$.

(They argue here by analogy with similar sums involving only whole numbers.)

But 1 yd. will cost $15s. \times \frac{2}{7}$ (since 1 yd. = $\frac{2}{7}$ of $3\frac{1}{2}$ yds.)

Therefore $15 \div \frac{7}{2} = 15 \times \frac{2}{7}$

If the teacher himself is not clear why this is a case of division by a fraction (for analogy is not a strong form of argument) he should remind himself that in the sum given above we are finding what part of 15s. has a one to one correlation with one yard, it being given that $3\frac{1}{2}$ yards has a one to one correlation with 15s.; a clear case of division. This argument is of course too difficult for a child; it is important to match the degree of reason in an argument with the stage of reason he has

¹ For this work see:—

Norms of Performance in the Fundamental Processes of Arithmetic with Suggestions for their Improvement: P. B. Ballard (*Journal of Experimental Pedagogy*, March 5th, 1915).

Also:

An Investigation on the Value of Drill Work in the Fundamental Operations of Arithmetic: J. C. Brown (*Journal of Educational Psychology*, Vol. II).

Also

The Value of Daily Drill in Arithmetic: F. M. Phillips (*Journal of Educational Psychology*, Vol. III).

² Educational Psychology (Vol. II, ch. III): E. L. Thorndike.

reached : that the rule may appear reasonable to him, and not a form of torture devised by pedagogues, is all I ask.

Pupils learning a new rule should first be required to tackle unaided, using commonsense methods, simple problems or applications of the unknown rule ; it is time to make explicit, to express or formulate the rule, as soon as, but not a moment before, his struggles with the first set of problems have brought to his mind at least some glimmer of the principle involved ; then should come a period of drill or practice in working sums, freed from the intricacies of the problem ; finally the pupil should be given opportunity to apply what he has learnt to more difficult problems involving the rule. Apply, express, give drill, and then again apply—so the rhythm of teaching runs, and drill falls on the third beat.

Much that has been said so far, both in connection with the forming of the disposition or set, and the making of habit connections, has involved the third process in learning, namely, the acquirement of the concept ; this is as it should be, for no mind process works detached from the others. The mind works as a whole, and only by analysis can separate processes be distinguished. Much more, however, can be said of significance for our subject in connection with the acquirement and manipulation of concepts.

It is a mistake to think that the logical order—sensation, precept, idea and image, concept—is the order followed by the human mind : far from this it has been maintained that the conceptual element arises in the first perception,¹ and so far as perception involves some apprehension of relation to environment and self this must be so. We apprehend a thing conceptually (whether in perception or in thought) when we apprehend its relations both within and without its boundaries. Examples will make this clearer :—A child, solving a geometrical problem, analyses the data into their elements ; he finds, say, a pair of parallel lines (thus he discovers relations within the boundaries of his problem) : but some time in the past he learnt about the properties of parallel lines ; this knowledge, drawn from a context outside the boundaries of his given problem, he brings to bear upon the parallels within, and the solution follows. A certain child, on being asked by his Sunday-school teacher “ What ought Herod to have said when Salome asked for John the Baptist’s head ? ” promptly answered “ Herod should have said ‘ John’s head is not in that half of my kingdom which I promised.’ ” Obviously that child had suffered from the gift of the half of something for which he had not bargained, and he saw relevancy between the otherwise different situations ! The child had a weaker sense of relevancy, or perhaps a stronger sense of fun, who interpreted the first word of the line “ Perched on a city office stool ” by “ a fish $3\frac{1}{2}$ feet long, a roost for fowl ” ; so also she who found the derivation of the word equilateral in “ equus, a horse.” It was pain, not fun, for the child who, when asked in the grammar lesson “ How many numbers are there ? ” answered in good faith, and was punished for the answer, “ Hundreds, thousands, millions,” and then, hysterically, “ billions and billions and billions of billions.” All these examples are cases of conceptual thinking, because in all, meanings

¹ See “ Consciousness of the Universal ” : Dr. Aveling (Part II, §2).

learnt by the mind in past dealings have been used to interpret a present situation. The degree of relevancy between the elements of experiences past and present determines the value for truth or for humour of the solutions reached.

Concepts provide for us categories, schema by means of which a present situation is "taken hold of."¹ The concept comes to be, quoting Professor Spearman's bold analogy, "a little dépôt stored in readiness to equip whatever thoughts may happen to march its way."² Sturt's analogy of the "pattern construction" properties of cognition helps me more.³ To describe a thing by apt analogy is relatively easy, but the device may hide the nature of the thing described. To describe what concepts appear to do for mental life is one thing, to say what they are in themselves, or how and where "stored up in readiness" is quite another—a problem only to be solved when the nature of the mind is known.

A more practical matter for the purpose in hand is to discover the processes leading to the acquirement of concepts. Here there is relative agreement between psychologists, whatever their standpoint. The concept is reached through a gradual differentiation of situations effected by the establishment of bonds of connection between parts of the situation and parts of the response (whether these bonds are of the mind "*geistes*"⁴ or of the nervous system⁵ makes no difference for our present purpose). In this way the situation becomes defined or analysed into its parts, and in course of time these "bonds" achieve relative independence and can be used to illuminate or interpret other situations involving elements akin.⁶ The significance of all this for the teacher is obvious; he must first see to it that the child has concepts available for the matter in hand before he concerns himself with their logical arrangement, otherwise he is building "bricks without straw." The child must be given opportunities to analyse the object of his study, to react upon it in one way and another, breaking it into its related parts. Formulation of the principle or rule involved does not come till this process is completed, not indeed till the second beat in the rhythm of teaching. The matter for the pupil's learning should not be given piecemeal, as so often happens in mathematical teaching, but as a relatively undifferentiated whole. The mind is "total-working,"⁶ as Mr. Sturt puts it; therefore the matter presented to the mind must be presented as a whole awaiting analysis. Once analysed, the concepts reached must be ordered and arranged according to the strictest laws of logic.

I shall illustrate this last point by several examples drawn from the fields of mathematics. The personal experience with which I opened this paper gives a useful illustration; all the things I had learnt enumerated there are instances of ratio, belonging to one field of knowledge. It would have been better, since the mind works "whole wise," to have presented each in relation to the other. When related things are presented together, realisation of the relationship is more easily come

¹ The Data of Education (ch. xiv) : T. P. Nunn.

² The Nature of "Intelligence" and the Principles of Cognition : (ch. xiii) C. Spearman.

³ Principles of Understanding (ch. iii) : H. Sturt.

⁴ Psychological Principles : J. Ward (chapter xii, §4; also see chap. vii).

⁵ Educational Psychology : E. L. Thorndike (chap. ii and chap. iii).

⁶ Principles of Understanding : H. Sturt (chap. iii).

by. Between the ages of eleven and thirteen is, I think, the time for a systematic study of ratio ; it would be well in these years for the teaching of any class to be altogether in one teacher's hands, so that the barriers between subject and subject in the mathematical curriculum might be broken down—it is a counsel of perfection for the science also to be in the same teacher's hands. In these years simple surveying can be taught, when the child will discover by measurement and division the ratio property of similar triangles. He can use his discovery in the entertaining task of enlarging drawings, either with or, better, without the use of the pantograph. This experience of ratio can be amplified in the arithmetic lesson, by finding the fraction one number is of another, leading on to proportion (direct and inverse) by the method of ratio (unitary method hides the issue). The Physics course at this time can concentrate on experiments that discover ratios, such as the inclined plane, friction, the image, specific gravity, the lever and so on. Graphs give us the ready reckoner, and Algebra simple and inverse variation. Towards the end of the course simple numerical trigonometry will be begun, and the tangent will appear quite simply as a ratio and run no risk of being confounded with the angle. In graphs the gradient and turning points will be studied. Things that go together should be taught together ; that, I think, is a sound maxim. Many other illustrations of the same point could be given. For instance, instead of relegating conic sections to a special book available only to the highly enlightened, it might be well to group some of the propositions of conics with the theorems of Euclid whose use they exemplify : after all, space is the whole that the geometer analyses, and the ellipse, the parabola, and the hyperbola are as fundamental forms as are the parallelogram, the triangle and the circle. More than this, however, follows from our principle ; since space is the whole, and space as our senses give it, is three dimensional, the child must in addition investigate the properties of the simpler solids : we are apt to teach him geometry as if he lived in two dimensions only ! Solid geometry appeals quite naturally to children, providing models are used more freely than diagrams. Models are, indeed, more effective than diagrams or verbal explanations in all branches of elementary teaching. The more that can enter the mind by one beat of attention, the more economical will our learning be. In geometry converse theorems should be taught together ; in algebra the product of $(x-3)(2x+1)$ and the factors of $2x-x^2-3$ ought to be tackled in the same lesson ; in the calculus it is best for the beginner to learn to integrate when he learns to differentiate—it is as easy to find that

$$y=x^3+k \text{ if } \frac{dy}{dx}=3x^2 \text{ as it is to find that } \frac{dy}{dx}=x^2 \text{ if } y=\frac{1}{3}x^3.$$

Direct and inverse proportion (by the ratio method) should be taught in the same lesson-unit, if not in the same lesson, and so on through the subjects.

There is a matter touching conception which has long proved a trouble to psychologists. What function does the image or word perform in conceptual thought ? There is no uniformly accepted opinion on this matter ; research of the future may find the answer to the question. It has been suggested by Dr. Aveling that the work of the image is to correct the instability of thought, since the image makes stable the

conceptual element it carries.¹ Mr. Bartlett suggests other uses—the image is likely to occur, he writes, in situations involving either “checked reaction” or “alternate reaction.”² Imagery, on all these views, will be of use to the mathematician; even writers who describe images as “mental luxuries” and “late sporadic products” admit so much.³ Imagery, however, ranks with the specific mental abilities and is outside the range of this paper.

Mathematics is the subject that has always held first place for the mental training it gives; from its pursuit may emerge an ideal for exact reasoning, whatever the object of the mind’s exercise. It may be thought that, considering my subject, little has been said in this paper about the reasoning processes. It is, however, by no means my purpose to preach a revolt against accurate reasoning—far otherwise, for I have been throughout trying to show how this ideal may best be achieved. Much could be said upon this matter, but two things will suffice of especial importance to present-day teaching.

One is that in no stage of the child’s development must we permit slip-shod thinking; it is one thing to refrain from demanding depths of reasoning beyond the stage of his development, quite another to let him rest content with a loose argument. It is true that all conclusions, reached by inductive reasoning, exhibit different degrees of probability⁴, but the child in his course of, say, experimental geometry, should be made to feel that his conclusion based perhaps on the measurement of half a dozen cases, rests on the very slenderest evidence and has in consequence, so far as his relevant evidence goes, a very slight degree of probability (measured, providing we regard experimental geometry as a branch of Physics, by the fraction $\frac{m+1}{n+1}$, where m is the number of cases measured and n all the cases in Euclidean space⁵).

At the age of adolescence the child is ready to begin formal and deductive geometry; this is the other matter concerning reasoning about which I wish to speak. When this subject is begun, providing the child has previously had suitable geometrical training, the strictest deductive reasoning should be demanded of him. It is, however, absolutely essential that he should be clear about the rules of the game; uncertainty as to what he may or may not assume is, I believe, the root of many a beginner’s difficulties. It is of the utmost importance that the course of experimental geometry taken earlier in the school career should not give away conclusions to be reached later by deductive reasoning, otherwise the child will not be struck by the importance of these processes: the middle school course is best directed towards the discovery of the assumptions on which the later deductive course should be based. Professor Nunn reduces these assumptions to a minimum in a most helpful article on “The Sequence of Theorems in School Geometry,” published in the *Mathematical Gazette* of May, 1922.

¹ The Consciousness of the Universal (Part II, §2) : F. Aveling.

² Functions of Images : F. C. Bartlett (*The British Journal of Psychology*, April, 1921).

³ The Meaning of Meaning (chap. iii) : C. K. Ogden and I. A. Richards.

⁴ A Treatise on Probability (Part III, chap. xviii) : J. M. Keynes.

⁵ On the Relation between Induction and Probability : C. D. Broad (*Mind*, Oct., 1918, Jan., 1920.)

I have tried in this paper to show that the teaching of mathematics depends both on a knowledge of the subject and a knowledge of the mental processes involved in learning. Method is of the mind, as well as of the subject studied. If this is understood there can be no one cast-iron method to which all teachers must conform. As many methods as he has years to teach can be found by him to obey the underlying psychological principles. Thus the teacher who is a student of psychology escapes the drudgery that results from the constant repetition on the same stereotyped lines of elementary subject matter : always he can change his lines of teaching, and the increase of interest adds to his zest. Most of us start the years of our teaching thrilled by the spirit of adventure ; such a teacher as I have described will be able to keep this spirit alive even to the last year of his teaching.

Children's Reasonings: Experimental Studies of Reasoning in School Children.

By W. H. WINCH.

PART IV.

THE reader is referred to Part I of these articles, published in the JOURNAL OF EXPERIMENTAL PEDAGOGY for December 5th, 1921, for the Questions in Reasoning and the method of their administration ; and to succeeding numbers of that Journal in 1922 for an account of the results in schools previously dealt with. In this article the results are recorded from another school ; but, in view of the more lengthy accounts previously given from other schools, much more briefly.

For convenience the tests given are repeated here :—

1. Johnny went to see his aunt. There were only three ways in which he could go, for it was too far to walk. He could go by train or by 'bus or by tramcar. He did not go by tramcar nor by train. Can you tell me how he did go ? If you can, say what makes you think so. If you cannot tell, say why you cannot tell.
2. Tommy said, "All the boys in our Sunday School, except me, have gone this morning for an excursion." Just after he said that, another boy who went to the same Sunday School was seen playing in the street. Was Tommy right in what he said ? You must give a reason for your answer.
3. There were three boys, Tom, Dick, and Harry, and they were friends. But they did not like going out all three together ; they liked to go out two at a time. Write down the names of all the different pairs they could make, so as to go out two together each time.
4. All the butchers' shops in a long road were painted red. If you were in that road and you saw a shop painted red, would you be certain it was a butcher's shop or would you not ? You must give a reason for your answer.

XIV.—THE REASONINGS OF SCHOOL "R.D." BOYS.

This school is the boys' department corresponding to the girls' department of school "R.D.," the results from which have been already cited. It is a suburban school situated in a 'poor' neighbourhood. The boys belong to the same families and come from the same houses as the girls. In general pedagogical efficiency the girls' department, for some years past, has been considered to be on a higher level than the boys' department.

These two schools possess one common factor, namely, social class ; but they differ in pedagogical efficiency, the balance lying on the side of the girls.

Shall we, in this case, find a clear sex difference ? The work of the boys will be very briefly illustrated by means of actual typical answers, and then summarised results will be given.

The Reasonings of Arthur L——, aged 13 years 1 month, Standard VII.

1. I cannot tell, because we never knew him, and never saw which vehicle he was used to for traveling.
2. Tommy was wrong because if he saw this boy playing, all of them except himself could not have gone.
3. Tom and Dick, Tom and Harry, Dick and Harry.
4. I would be certain because, after seeing so many butchers' shops all painted red, you would call this a butcher's shop.

Arthur does not need to know Johnny's personal habits before deciding ; and his fourth answer also is wrong. But he gives quite a good psychological account of what would happen : we *should say* "butcher's shop," until checked by our reflective judgment.

The Reasonings of Leonard S——, aged 11 years 6 months, Standard V.

1. He went to see his aunt by bus. The reason why because if he did not go by tramcar, or by train, he must have went by bus, and it does not tell about anything else.
2. Tommy was wrong because he said all the boys have gone except him, but when he was out in the street he saw another boy who goes to his Sunday School, he is wrong because he said all the boys had gone, but their was two realy had not gone.
3. Tom and Harry went out together at first, and then Dick would go with Tom and then Dick with Harry. If Tom went with Harry, and then Dick went with Tom, and then Harry went with Dick that would give them two turns each.
4. If a shop was painted red, and it was not a butcher's shop we could tell whether it had meat in it or not.

The last question is too much for Leonard ; but his paper is interesting as that of a boy who reasons well, though he has not acquired much in spelling and grammatical expression.

The Reasonings of John H——, aged 8 years 4 months, Standard III.

1. he would go half way. have a rest and go on his way. My brains make me think so.
2. he was wrong because he said all the boys have gone for an excursion and a boy had not.
3. only one pair and one over, the one over is HARRY.
4. I would not think it was a butcher, because every shop is not painted red some blue, green, yellow, and all other colours.

John believes in the nervous correlates of thought ; but his answer in terms of them, like that of greater thinkers than he, lacks precision when applied to any particular case. His second answer is right ; but in the third he can only find one pair, and in the fourth disregards the limitation to the butcher's shops in one particular road.

The Reasonings of John B——, aged 10 years 5 months, Standard II.

1. Tommy went to see his aunt
2. No because Tommy didnt wont to go
3. They wood go out each other days
4. No because it might be a tea shop

John is fairly representative of his class ; he is not correct in his first, second, or third answers, and he has absorbed a taught formal in his fourth ; for this class, through misadventure, was sophisticated with respect to this question.

TESTS ON REASONING OF SCHOOL CHILDREN

REASONING ABILITY AND AGE IN SCHOOL "R.D." BOYS.

TABLE XIII.

Showing the Relation between Reasoning Ability and Age in School "R.D." Boys.

Ages.	No. of Boys.	Average Age in Yrs. Mths.	Average No. of Correct Answers.
13 years	55	13 5.5	2.4
12 ,,"	46	12 5.0	2.5
11 ,,"	38	11 5.3	1.9
10 ,,"	49	10 7.0	1.5
9 ,,"	52	9 5.7	1.1
8 ,,"	54	8 6.0	.7

Comments on Table XIII.

Again we find high positive correlation between reasoning ability and age. We have, moreover, to remember that the figures for the eight-year-old group and the nine-year-old group are too high; for, just as in the girls' department of the same school, one of the lower standards, owing to a somewhat similar misadventure, was sophisticated with respect to one question. Are these boys (of the same social class as the girls be it remembered) better than the girls? If the pedagogical efficiency of the school is a factor in the results, they may be naturally better, for the figures are practically the same.

REASONING ABILITY AND SCHOOL-GRADING IN SCHOOL "R.D." BOYS.

Are the boys more accurately graded on a basis of reasoning ability in their school standards than they would be by means of an age classification?

TABLE XIV.

Showing the Relation between Reasoning Ability and School-grading in School "R.D." Boys.

School-Grading.	No. of Boys.	Average Age in Yrs. Mths.	Average No. of Correct Answers.
Standard VII	16	13 1.5	3.1
," VI	45	12 9.3	2.9
," V	34	12 3.0	2.2
," IV	48	11 2.5	1.8
," IIIa	43	10 0.1	1.2
," IIIb	44	10 3.2	1.2
," II	37	9 4.8	.9
," I	27	9 1.9	.1

Comments on Table XIV.

The classes, as wholes, are well graded, except the two divisions of Standard III, where no attempt had been made by the Headmaster to form an upper and a lower division. Standard for standard, the boys are better than the girls of this school; but the comparison is not a fair one, for a much larger proportion of girls than boys have been placed in upper standards of the school. Standard II is higher than it should have been from a cause already indicated.

TESTS ON REASONING OF SCHOOL CHILDREN

TABLE XV.

Showing the Relation between Reasoning Ability and School-grading within each Age-group of School "R.D." Boys.

Age.	School-Grading.	No. of Boys.	Average Age in Yrs. Mths.	Average No. of Correct Answers.
13 years	Standard VII	11	13 5.7	3.1
	," VI	21	13 6.5	3.0
	," V	11	13 4.0	1.6
	," IV	7	13 4.1	1.5
	," IIIa	4	13 5.0	.8
	," IIIb	1	13 11.0	2.0
12 years	Standard VII	5	12 4.2	3.0
	," VI	16	12 7.0	2.9
	," V	12	12 2.5	2.5
	," IV	7	12 5.8	2.1
	," IIIb	5	12 4.0	1.2
	," II	1	12 7.0	.0
11 years	Standard VI	6	11 6.0	2.8
	," V	7	11 6.3	2.5
	," IV	11	11 5.0	1.9
	," IIIa	4	11 3.5	1.0
	," IIIb	7	11 6.4	1.0
	," II	1	11 5.0	3.0
	," I	2	11 0.0	.0
10 years	Standard VI	1	10 9.0	3.0
	," V	4	10 7.7	1.5
	," IV	15	10 4.8	1.8
	," IIIa	10	10 4.2	1.4
	," IIIb	11	10 3.7	1.4
	," II	5	10 4.2	1.0
	," I	3	10 4.1	.7
9 years.	Standard VI	1	9 6.0	3.0
	," IV	8	9 7.0	1.6
	," IIIa	17	9 4.3	1.2
	," IIIb	10	9 7.0	1.1
	," II	9	9 5.1	1.2
	," I	7	9 6.7	.0
8 years.	Standard IIIa	8	8 7.8	1.4
	," IIIb	10	8 7.5	1.0
	," II	21	8 5.3	.8
	," I	15	8 5.1	.0

Comments on Table XV.

Again, we find when we consider the work of the children of the same age in different standards, that the school classification has been largely

TESTS ON REASONING OF SCHOOL CHILDREN

based upon intelligence. But there are a few cases which appear doubtful. Is the thirteen-year-old boy in Standard IIIb rightly graded ? He has written a fairly good paper, and that ought to give us pause ; yet we cannot determine with *certainty* on the results of our four problems. The twelve-year-old boy in Standard II seems unfit for anything higher ; he is probably a case for a sub-normal class. The ten-year-old boys in Standard IV should not be better than those in V, as they very obviously are ; and, as I have already stated, Standards IIIa and IIIb are not upper and lower sections, but equal divisions ; a method of classification which throws away the advantages to be obtained by a school of considerable size. Still, on the whole, we cannot say that the wrong boys have been promoted ; the figures show almost invariably that for boys of the same age those in the higher standards are more rationally intelligent than those in the lower. But are the standards fairly homogeneous within themselves ?

TABLE XVI.

Showing the Relation between Reasoning Ability and Age within each Standard or Class of School "R.D." Boys.

School-Grading.	Age.	No. of Boys.	Average Age in Yrs. Mths.	Average No. of Correct Answers.
Standard VII	13 years	11	13 5.7	3.1
	12 ,,	5	12 4.2	3.0
Standard VI	13 years	21	13 6.5	3.0
	12 ,,	16	12 7.0	2.9
	11 ,,	6	11 6.0	2.8
	10 ,,	1	10 9.0	3.0
	9 ,,	1	9 6.0	3.0
Standard V	13 years	11	13 4.0	1.6
	12 ,,	12	12 2.5	2.5
	11 ,,	7	11 6.3	2.5
	10 ,,	4	10 4.8	1.5
Standard IV	13 years	7	13 4.1	1.5
	12 ,,	7	12 5.8	2.1
	11 ,,	11	11 5.0	1.9
	10 ,,	15	10 4.8	1.8
	9 ,,	8	9 7.0	1.6
Standard IIIa	13 years	4	13 5.0	.7
	11 ,,	4	11 3.5	1.0
	10 ,,	10	10 4.2	1.4
	9 ,,	17	9 4.3	1.2
	8 ,,	8	8 7.8	1.4
Standard IIIb	13 years	1	13 11.0	2.0
	12 ,,	5	12 4.0	1.2
	11 ,,	7	11 6.4	1.0
	10 ,,	11	10 3.7	1.4
	9 ,,	10	9 7.0	1.1
	8 ,,	10	8 7.5	1.0

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School-Grading.	Age.	No. of Boys.	Average Age in Yrs, Mths,	Average No, of Correct Answers.
Standard II	12 years	1	12 7.0	.0
	11 ,,"	1	11 5.0	.0
	10 ,,"	5	10 4.2	1.0
	9 ,,"	9	9 5.1	1.2
	8 ,,"	21	8 5.3	.8
Standard I	11 years	2	11 0.0	.0
	10 ,,"	3	10 4.1	.7
	9 ,,"	7	9 6.7	.0
	8 ,,"	15	8 5.1	.0

Comments on Table XVI.

From the standpoint of reasoning ability the teacher of Standards VI and VII (taught as one class) should be satisfied with his boys. They obtain a good mark, and, what is much more important to him as a teacher, they appear to be a homogeneous class. For example, the thirteen year-old boys, the twelve-year-old boys, the eleven-year-old boys, the ten-year-old boy, and the nine-year-old boy all achieve approximately the same average result. The thirteen-year-old boys in Standard V appear to have been graded too high, and so do the ten-year-old boys in the same standard. Standard IV is fairly homogeneous, as is also Standard IIIa, with the exception of the four boys of thirteen years. There appear to be a rather large number of boys in this school who are old and yet not fit for the higher classes. Standard IIIb is a homogeneous class in reasoning ability, although it contains boys ranging from thirteen downwards to eight years of age. The boy of thirteen is rather too good for this class. Standard II was, as I have already pointed out, slightly sophisticated ; its mark is too high. The twelve-year-old boy and the eleven-year-old boy in this class and the two eleven-year-old boys in Standard I should have been examined for mental deficiency years before. Standard I, of course, achieves practically nothing. In the first place, Standard I in Senior Schools is not, in a true sense, a normal group, if there is also a Standard I class in the Infants' department. And, secondly, only the children over eight have been tested. The mark, therefore, for this class is a little too low ; but, in any case, it would be lower than that of the Standard I class in the Infants' department. On the whole, the boys within the same classes, though of widely different ages, do not appear to be widely different in reasoning ability as measured by our tests ; though, here and there, there are boys very old who seem fit for nothing but the lowest classes, which, unfortunately, are not fit for them.

END OF PART IV.

The Subject and the Pupil.

BY HELEN WODEHOUSE.

We must regret that the Departmental Committee on the Classics, unlike the Committee on English, has allowed its inspiring Report to include a few passages which might have been written thirty years ago, so confidently do they trench on the veriest quicksands of doubtful doctrine. The Honours student in Classics, they write, has had "a course of training which requires the exercise of many different powers of the mind and forms a remarkable combination of memory-training, imagination, æsthetic appreciation and scientific method" (p. 7). Latin, from the construction of its sentences, "seems to be of special value in training the reasoning powers" (p. 8). Latin composition for the non-specialist "should be used as a means of securing accuracy and of training the mind" (p. 9). And for the schoolboy of small capacity for classics "there is also the question of the intellectual discipline involved in the exercise of faculties which might otherwise remain dormant. Any success in the study of Latin, however small, must be the result of real mental effort, of the application of some accurate, if limited, knowledge and of some power of adapting general rules to particular cases, and that of a kind which no other study can so well provide" (p. 119). At the meeting of a branch of the Classical Association which I was privileged to attend, most of the speakers seemed to accept these claims without question. The only adverse speech I heard (a very good one) rested upon the argument that the training to be derived from any subject depended upon the way in which it was taught. Whilst admitting all the importance of this, should we not add also what nobody added in this discussion, that it depends on the shape of the pupil's mind?

Among psychologists, I suppose we may take it that certain general conclusions on "mental discipline" have now been accepted. If a boy does a good deal of Latin and succeeds in it, he will remember his declensions better as he goes on, and will extend his Latin vocabulary more easily, and will reason better about the construction of a Latin sentence or a Latin verse. Whether his remembering or his reasoning outside Latin will improve will depend on the extent to which the material acquired or the methods made habitual can be used in the outside situation. And the determination of that extent cannot be left to any easy identification of terms such as "both situations need accuracy," "both need the reasoning powers." On the contrary, every claim must be taken on its own merits, and most are likely to present us with difficult problems for analysis and experiment.

Nevertheless, I incline to think that we ought to add something to this summary of doctrine. Half of the addition, though not the whole, may be taken from the famous account by Dr. Montessori of "the fundamental fact which led me to define my method."

Advanced Montessori Method (p. 67) :

"I happened to notice a little girl of about three years old deeply absorbed in a set of solid insets, removing the wooden cylinders from their respective holes and replacing them. The expression on the child's face was one of such concentrated attention that it seemed to me an

extraordinary manifestation. . . . I counted forty-four repetitions ; when at last she ceased, it was quite independently of any surrounding stimuli which might have distracted her, and she looked round with a satisfied air, almost as if awaking from a refreshing nap. . . .

" This phenomenon became common among the children. . . . And each time that such a polarisation of attention took place, the child began to be completely transformed, to become calmer, more intelligent, and more expansive ; it showed extraordinary spiritual qualities, recalling the phenomena of a higher consciousness, such as those of conversion.

" It was as if in a saturated solution, a point of crystallisation had formed, round which the whole chaotic and fluctuating mass united, producing a crystal of wonderful forms. Thus, when the phenomenon of polarisation of attention had taken place, all that was disorderly and fluctuating in the consciousness of the child seemed to be organising itself into a spiritual creation. . . . "

Now, though I cannot follow Dr. Montessori in every part of her system, these observations seem to me to bear the mark of truth as well as of genius. May we not accept this absorption in a fitting activity not only as itself a part of the good life but also as a healthful experience which leaves us the better for it all round : better-tempered, quieter and happier, fuller of vitality ? If so, we may allow the believer in mental discipline to base his claim on improvement of general spiritual health as well as on acquirement of special skills. " Our teachers," says Dr. Montessori, " never say : The child is developing, or progressing, the child is good or naughty, etc. . . . The only phraseology they use is : The child is becoming disciplined or is not becoming disciplined. It is internal order that they await" (p. 122). If a child's mind can thus be ordered by placing insets or by reading and writing Latin, then to introduce him to these activities is one of the best things the educator can ever do. Nevertheless the claim to health must be watched as carefully as the claim to skill. The benefits of absorption in a subject are gained only by those pupils who are actually absorbed.

" All young children are very much alike," wrote an " elders' teacher" among my students, " and differences of character do not appear until the seventh year." Dr. Montessori seems to lend a certain countenance to this. " By means of experiments," she tells us, " external stimuli may be determined with the greatest precision. . . For instance, very small objects . . . will only attract the fugitive attention of a child of three years old ; but by increasing the dimensions gradually we arrive at the limit of size when these objects will fix the attention. . . . The experiment is repeated with a number of children, and thus the dimensions of a series of objects are established. It is the same with colours and with every kind of quality." Whatever happens at three years old, we cannot admit that this uniformity can be counted on at thirteen. Common experience seems to show that different minds at that age are polarised by different things, and that the difference depends not only on the amount of general ability or on the level of development—not only on the size of the mind, but on what I have called its shape. If a teacher claims that a subject is health-giving for a certain pupil, he must show that the subject so fits the pupil's mind that absorption is possible for him and actually results.

Mental and moral life become healthier, we used to say, when we "apply ourselves" to a good piece of work. The saying may still hold, and we may stress its vivid metaphor more than we did. We can only apply ourselves to the work in so far as its shape and ours can be made to fit each other. If the fit is good, a large piece of our mind and self can get into the subject and maintain contact with it over a continuous surface; and a full and wide complex of dispositions of all sizes can work out steadily within it and by its means, so that the whole circulation and vitality of the self is likely to be improved. But if the fit is bad—if our "bent" is not this way—then we can secure no application except of small discontinuous patches of our mind. We cannot "get down to" this work. The dutiful student working at an unfitting subject is like a gymnast using an apparatus meant to take the whole body but able to admit, of his body, only the left foot, the right forefinger, and the head. With these he must do the work which the apparatus demands. The work will be ill done, and the effect on the gymnast's health will be more than doubtful.

Is this an empty metaphor? I cannot believe it. It is metaphor, of course: yet the analogy seems to me to be based on real experience, and on a part of experience which discussions on discipline should not leave out. Granted that most minds are malleable and adaptable to a considerable extent; that, within limits, interests can be acquired, and that, within limits, acquired interests mean a change in the shape of the mind. Granted also that a difficult subject usually demands some effort and pressure before we "get into it"; effort and pressure which may even have to be repeated every day. With every allowance made, surely it remains true that a fit and a misfit are as different in the mental as in the physical world, and that the difference is no less important for mental health than for physical. The harder the work that is to be done with or within the apparatus, the more important that difference will be.

In the infant school or the public school, in the army or the factory, an ill-fitting discipline will have two bad results. The more far-reaching evil, perhaps, is the enforced idleness of the greater part of the subject's dispositions and powers. Whilst we spend some of our force in extorting work from a small part of the self, we spend more in compelling the rest of the self to do nothing. But the evil of the work done, of effort extorted in a bad position, is also not negligible. "Just when the violin student or the typist is bringing her technique to absolute completion, violinist's or typist's 'cramp' may come on, and the nervous system may refuse to repeat the habitual act. Something of the same kind seems to happen from time to time in the process of forming intellectual or emotional habits."* I do not know the exact facts about the violinist or typist, but "writer's cramp" at any rate seems to come largely from our using the small muscles of the finger or hand where we ought to use the arm and shoulder. The mental analogy may hold here also.

The picture becomes more complicated, but is still workable, if we note that intellectual apparatus is often more adaptable to different "sizes" of mind than to different "shapes." Of two students of mathematics in a university, A may be the more able student and may get a

* Graham Wallis: "The Great Society," p. 84.

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high second class, while B gets a third ; yet A may be bored and wearied, and half-attentive in spite of all his efforts, because his real bent is towards history or philosophy ; whilst B, though not very successful in his studies, may be thoroughly interested and absorbed. The effort to attend is A's—the effortful attention, the strenuous thought, the health-giving polarisation belong to B.

This is a metaphorical discussion. But does anyone doubt the central point, that of several persons educated by means of the same subjects taught in the same way, some will thrive on the education and some will not ? If we do not doubt it, ought we not to give it more weight in our estimates of educational values ?

How the Good Wife Taught her Daughter.

BY MARGARET STEPPAT.

THE recent interesting Board of Education *Report on Differentiation of Curricula between the Sexes in Secondary Schools* disposes of the early education of women in a few sentences, and indicates that only a handful of individuals in noble families went beyond religious instruction, reading, writing, and sewing (or spinning).

The pre-Reformation education of women is, it is true, wrapped in a good deal of obscurity, but it is possible to gain some idea of what took place.

The position of women in the Middle Ages was in some respects worse, in some respects better than now. It is important in considering the matter not to imagine the position or even education of women as having followed a steadily progressive evolution up to the present day. Their position in the social scale is adjusted by fluctuations in economic and cultural conditions of sometimes the most delicate kind, and is, according to Professor Mahaffy in his "Social Life in Greece," the "great test point" by which a civilisation is to be judged. During Saxon times, chiefly owing to the influence of the Christian church, their position had steadily improved, and in Norman times and throughout the Middle Ages a woman was, in the manor-house, with her children, the only social equal of her husband. She was moreover the custodian of whatever book learning there was at home, and in the early Middle Ages was more often able to read and write than her husband. We must judge the standard of her education by her own times, therefore, and not by ours. She was surgeon and physician to her household; when single or a widow, she managed her own property. In less exalted circles, a surprising number of callings were open to her, and she acted as churchwarden and sheriff. The effect of the culture of the nunneries on the country at large is considered by Miss Eileen Power (*Mediæval English Nunneries c. 1275-1535*) to be small. The chief source of education for girls was at home, and in humbler classes they went, at any rate in some numbers, to school.¹ The usual practice was to board a daughter with a relative or friend of equal rank, from the age of about nine years, in order to have her instructed in all that became a lady²; occasionally a lady was engaged as a governess instead. This custom refers also to boys, who obtained their training as knights from the lord of the manor, but that in book-lore, manners, music, and such subjects from his lady. Sir William Plumpton mentions that his little girl of four could speak "French prettily" and nearly "say her psalter." The heroine of the romance of Guy of Warwick learned astronomy, "arsmetrick," and geometry, as well as rhetoric.³ Dancing, music on one or two instruments, and singing were essential,

¹ See Abram: *English Life and Manners in the Later Middle Ages*. 1913. p. 326.

The practice is also mentioned by the Knight of La Tour-Landry, and in the verses printed in Caxton's *Dialogues in French and English*—"Send the children to the scole."

² References to Chaucer, Hoccleve, and other works are given by Abram, p. 214, *op. cit.*, and elsewhere.

³ See Bateson: *Mediæval England*, 1903, p. 322.

as well as the specific knowledge of the terms of the chase, falconry, and riding. All the medical knowledge which had been handed down by tradition had to be acquired, and spinning, weaving, and embroidery. The young girls, chambrières or damoiselles, who were being educated, spent the whole morning with the lady of the manor, working and being instructed,¹ while in the afternoon they mixed with the young men (damoiseaux) for their games, outdoor walks, and amusements—a day remarkably like that of some modern students.

The greatest importance of all was attached to the acquiring of “courtesy,” the name for the manners and conventions of cultivated life. In fact, the only works in our own tongue which deal specifically with women’s education at this stage concern themselves exclusively with morals and behaviour. Of these much the most important is “How the good wife taught her daughter.”² Several versions exist, and it seems evident that it stood as a model for “How the wise man taught his son” and a French poem of similar content. The quotation of one stanza (with modernised spelling) may give an idea of the blend of godliness and worldly wisdom of the time.

Daughter, if thou wilt be a wife,
 Look wisely that thou work,
 Look lovely,³ and in good life
 Thou love God and holy church.
 Go to church when thou may,
 Look thou spare for no rain,
 For thou farest best that every day
 When thou hast God seen.
 He must needs well thrive
 That liveth well all his life,
 My dear child.

(There are 219 lines.)

Two other of these early works refer to the deportment and regulation of the life of nuns, the “Ancren Riwle” and the “Myroure of our Ladye of Syon,” while a fourth is by the Scottish poet, Robert Henryson, and is entitled “Garmond of Gude Ladeis.” It is a picture of a lady dressed in virtue :

Her kirtle suld be of clene constance,
 Laced with lawful love,
 The eyelet holes of continence,
 For never to remove—

(10 stanzas)

and so on. Besides this there is the work of Walter of “Bibelesworth,” a French grammar, written in French, but meant for the instruction of a Kentish lady, Dionysia de Mountchesny.⁴ Some ladies could read liturgical Latin, who may have been educated in convents, where book-binding and other crafts were also practised.

¹ Wright : *History of Womankind*, p. 157.

² In F. J. Furnivall : *The Babees Book*, together with other early works on manners.

³ Kindly, friendly.

⁴ Described by Bateson, *op. cit.* p. 323. The manual appears to anticipate the Gouin Series Method of teaching a foreign language !

With the Reformation comes a flood of educational literature, much specifically intended for women, but much also that scarcely goes deeper than manners. The culture, mainly classical, which girls got from their tutors then is well known. It is a pity it was so shortlived, though it helped to form that personality which cannot have been rare in the period, if Shakespeare could offer us four such heroines as Portia, Viola, Rosalind, and Beatrice. It came however to an end, and the position of women fell to a level¹ which meant that those who wanted better things had as much to undo and destroy as to build up. Those few women who rose above the usual mental level of womanhood in the eighteenth century were, in spite of the select circle of the Bluestockings and outside of it, apologetic about their attainments² and nervously aware that they differed from the average ideal of womanhood. Their powers and achievements could, of course, encourage those pioneers of the nineteenth century to whom we owe so much, but the notion of a woman which was current in the middle classes from the 17th century was hard to kill.

Far, therefore, from being a dead-level standard from the 14th century to the 18th, women's education had many ups and downs.

¹ See Lyon Blease: *Emancipation of English Women*, Introductory Chapters.
² See Ethel Rolt Wheeler: *Famous Bluestockings*.

The Life and Work of Sir James Kay-Shuttleworth.

By Frank Smith. With an introduction by Sir Michael Sadler and a Chapter by Lord Shuttleworth. (John Murray. pp. x+365. 18s. net.)

"THE mind and character of a giant among public servants are now at last revealed," writes Sir Michael Sadler in his introduction; and his words exactly express what the book does. Everyone who was interested in the growth of our system of elementary education was aware that for the first ten years of growing State intervention Kay-Shuttleworth was the directing hand; but the knowledge has resulted in anything but a just appreciation of his work. The record of the State in its dealings with education from 1832 to 1870 is one on which the present generation looks back with a feeling of irritation. In this feeling the consciousness that we could not imagine ourselves now acting in the same way is blended with an uncomfortable suspicion that, if we had lived then, we probably should. Reading nineteenth century educational discussions is somewhat like what reading the newspaper report of his own trial and conviction would be to an elderly criminal who had long turned over a new leaf and been accepted as a respectable member of society. Without knowing much about Kay-Shuttleworth, most of us regarded him as the central figure in this episode on which we do not care to dwell, and we did not seek to know more. Perhaps we had heard that his educational methods were a most thorough application of a radically wrong "synthetic" psychology, or that he vigorously strove to centre control in Whitehall.

Mr. Smith's biography, without contradicting our beliefs on these last points, gives us an entirely new view of Kay-Shuttleworth's work, and thereby imparts the human touch to the dreary records of mid-Victorian educational politics. Far from being the incarnation of the mid-Victorian attitude, this book reveals him as a creative force, struggling for ten years to impose form on recalcitrant matter, and eventually succeeding so far as this inert matter allowed. The inert matter represents a lifeless system, a lifeless public, and lifeless politicians. The system was that of Bell and Lancaster, founded on the idea that education meant teaching the mechanical elements of reading, writing, and cyphering in the minimum of time. The public consisted of a working class which was largely too uneducated to appreciate education, and an upper and middle class which largely regarded State education as an attempt to make them pay for putting other people's children in a position to compete with their own. The politicians, professional and ecclesiastical, do not fare well in Mr. Smith's book. What is most striking is not that the bulk regarded education as a bore, as something demanding settlement (and "Can't we leave it alone?"), or as a pawn in the party game, as that not a single one recognised it as the decisive factor in the attitude towards life (which includes the attitude towards country and the attitude towards governments) of future generations.

When Sir Michael Sadler writes "a giant among public servants," not "among educationists," he strikes the keynote of Kay-Shuttleworth's life. The scheme and the proportion of the book are devised to bring this out in the early chapters, so that the record of administration to which

the author deliberately (as he tells us) devotes half the book can be read with this background. Kay-Shuttleworth approached education from outside. His outlook was that of a statesman, not of a teacher. The first quarter of the biography tells us how he came into education because, after taking part in several branches of social reform, he judged education to be the most effective. He started life as a doctor ; his first interest was naturally in sanitary reform ; but he was too great a man to be beguiled by what Bacon calls the "idols of the theatre" and to look at the World through the eyes of a profession. He saw that reform of material conditions was more a by-product of a change of spiritual values than the reverse. These chapters are enough, and not too much, to enable us to see him as a poor-law commissioner from 1835 to 1839 turning from economic remedies to educational : and the impression grows that when, in 1839, the Government needed a secretary to the newly created Education Department, he was the one man whom they could find with this conviction as the motive power of his life. It is some credit to the politicians that they at least recognised that a man of these convictions would be more likely to submit to the inevitable buffets and drudgery which his position would impose on him.

We suspect that the prevalent opinion is that Kay-Shuttleworth had the outlook of an official. Certain methodical tendencies which he displayed even as principal of Battersea have been emphasized to a point where it is possible to think of him as a man who would estimate a teacher by adding up marks for examination, marks for conduct, and so on. Perhaps it is over-idealisation to leave out this side of his character ; but the chapter on his short digression into the actual work of a teacher, as founder and principal of this training college, shows him as the peer of the greatest contemporary headmasters (his pupils were of the same age as the public schoolboys of Arnold and Thring) in winning the affections and moulding the characters of his boys. Without sympathy for the man we can hardly fairly judge the official.

Why Kay-Shuttleworth has till now been unfairly judged is that the educational machinery which he set up has necessarily been compared with that which we should desire at the present day. The right basis, as Mr. Smith reminds us, is with what there would have been without him, and this we can only conjecture. The forces at work were the British and National Societies, committed to a mechanical system, and a rising volume of demand for something to be done by the State, rendered ineffective by disagreement as to what it should be. The book gives us a sufficiently live picture of the period to make us suspect that, without Kay-Shuttleworth, there would have been ten or twenty years of tinkering with the monitorial system and of doles to the two societies ; what would have come at the end defies conjecture. The last part of the book is essential to its conception ; for herein is the tragedy of his life. We only realise the greatness of his work when we see it undone.

Kay-Shuttleworth clearly saw that education is an imparting of outlook, of standards of value, of a sense of responsibility : before him and after him those responsible for it regarded it as a training in certain dexterities commonly called the three R's. Hence, during the fifty years when the ethos of the modern democracy was taking shape, that ethos was but very partially influenced by the educational machinery which

was being elaborated, while most of the energy was diverted to pushing children through the scheduled tests.

The history of elementary education during this period is one which, in spite of its obvious importance as the immediate cause of what exists to-day, has, so far as my experience goes, repelled students of education. It was possible dimly to discern a tragedy—the tragedy of a nation—but it seemed devoid of a personal hero. We welcome the epic touch. It is better to think of Kay-Shuttleworth's heroism in trying single-handed to work out a system which would turn the young to the understanding of life, and with that aim patiently striving to appease contending factions, satisfy Ministers that some detail might not wreck a Cabinet, or supply a head teacher to Lady So-and-so's village school, than to spend time in pointing out that he would not have broken down in health if he had known how to delegate responsibility—if, that is to say, he had been an ordinary official and not a missionary.

We may criticise Kay-Shuttleworth's ideas on the training of teachers as supplying them with cut-and-dried uniform methods copied from abroad and worked up in the Department. But Mr. Smith raises us rather above this criticism in showing that Kay-Shuttleworth realised, as his predecessors had not realised, that the teacher was the central point in education. He brings together his endeavours while still a poor-law administrator, his first official act—the abortive attempt to found a State training college—and his personal efforts at Battersea. It is hard to see, with the problem of making teachers without any means at his disposal but what he created, how he could have at the time done better.

With Mr. Smith's defence of Kay-Shuttleworth's views of method we are not in entire agreement. He passes it over lightly, and shows a little irritation with Mr. Birchenough's criticisms of this side of his hero's work. Both writers are, we venture to think, right from their own point of view. Mr. Birchenough is right in holding that the current methods of those Englishmen who claimed to be following Pestalozzi were unsound, and that Kay-Shuttleworth placed on them the stamp of orthodoxy. Mr. Smith is right in his defence that Kay-Shuttleworth never claimed to be a creator of methods and took what seemed to be the most enlightened views of his time, and that these were in fact greatly superior to the cult of the three R's. That education had to grope its way through many mistakes to a true understanding of the workings of children's minds is lamentable; but it was inevitable. Because Kay-Shuttleworth felt the importance of education more than his contemporaries, and did more to translate his feelings into action, he is no more responsible than the rest of his generation for not ante-dating the progress of psychology. But it may be harmful not to emphasize the imperfections of the methods which he spread, because they have left a tradition behind them which it is proving very difficult to uproot—the faith in "talk and chalk," the passivity of the pupil, the isolated lesson, and the collection of unorganised scraps of knowledge.

Mr. Smith's biography is an attempt, and a successful attempt, to paint his hero in a shape which wins our love. So, we hold, should a biography do. Nothing is concealed, and the reader is able to criticise for himself. But, in spite of the criticisms which he will inevitably pass on its subject, he will probably agree with Sir Michael Sadler that this book gives him what Matthew Arnold claimed to be his due.

R. L. ARCHER.

Sanderson of Oundle.

366 pp. illustrated. 12s. 6d. net. Demy octavo. (Chatto and Windus.)

WHILE this book gives a glimpse of the man, it is chiefly devoted to expounding his work. In a sense it is a continuation of his last tragic lecture, which it prints in full. An introductory part deals with him and his earlier days at Oundle, enriched by recollections of many of his old boys. The middle part gives in considerable detail his methods and experiments in Oundle—this will especially interest practitioners. The second half of the book is a reprint of a selection of some dozen of his sermons and nearly as many addresses, in which he sets forth for the school and the outer world his faith as a schoolmaster. More than fifty anonymous contributors have been censored and marshalled by an anonymous editorial committee. The editorial committee apologises for some consequent repetitions which, however, are not serious.

This work of Sanderson's, as set forth pretty thoroughly in the book, should be studied critically, open-mindedly, by everybody who cares for, or who aspires to take any part in, education : it is one of the grandest contributions ever made by an Englishman to the science and practice of education.

The English Public School system is vindicated and its possibilities developed by his teaching and practice within it. While, for years unnoticed, he was demonstrating its essential elasticity and its adaptability to the needs of the present day, ill-informed journalists or letter-writers and half-fledged novelists were busy creating alarm and prejudice against it because they could see in it only a rigidity in which bred stagnation and other evils that seemed to prove its unfitness for this century. They were no blinder perhaps than his earlier contemporary headmasters—whose complacency the great war alone could shake—many of whom saw in his superb experiment nothing more significant than the large scale and energetic onslaught of a “big-endian” upon their “little-endianism.” Sanderson has breathed new life into the old system and has glorified it.

In his creed, every boy, quick or slow, has a right to a Public School education ; every boy has plenty of good in him and some ability : it is the privilege and duty of the school, having admitted him, to foster both in every possible direction ; and it is the responsibility of the school to achieve this by the most suitable and individual means. He was as unable to recognise the “average” boy as was Nelson to see the signal for retirement. His invincible belief in the boy and his unqualified and joyful acceptance of the responsibility was the mainspring of his achievement. One of the co-biographers refers, somewhat mistily it is true, to instances of “superannuation.”* Such must have been extremely rare. The practice was utterly distasteful to him, provoking his indignation. He thought it a cruel wrong in the majority of instances. He was likely rather to err on the other side, and by refusing to admit defeat—although no human institution may entirely escape some failures—to retain a boy when it

* A term applied in many schools to the practice of sending away a boy whose progress seemed not to warrant further endeavours or expense.

would possibly have been better for him to make a fresh start elsewhere. He met the difficulty usually by giving such a boy a new start in another part of the school.

Sanderson was not only a man of ideas, he was ready to listen to, and, after consideration, to adopt the ideas of others who worked in sympathy with his own, and since, like the master of a ship at sea, he was absolute in his school, he could carry those ideas into effect. Indeed, his experiment could hardly have been possible under any system which gave him less than complete freedom.

It is to be hoped that all managers and governors of schools will mark well the lessons of this book, and especially this, that like the drones they have one supreme periodic function. Their's is to appoint the Headmaster—a terrific task, demanding their united wisdom and prayer. Having appointed him, their further duty is to support him. Should he prove to be the wrong man, they should resign as failures. The mastership of the Headmaster is a bed-rock principle of the English Public School system, and should be extended in other English systems. Sanderson was fortunate in his governors. Once convinced of his greatness, in the main they supported him loyally and with funds. Without the last, even his intense energy would have been too closely pinioned. And that gives another lesson for the times. There can be no progress without experiments. All are agreed that progress in education is sorely needed. But experiments are costly—every manufacturer knows that. And training, to be successful, must be costly—every business man admits that, ruefully. The plague is that so many business men to-day, as rate-payers, taxpayers, or as Councillors, act or write as if the truth has no force in the schools. Sanderson demonstrated the great economy of lavish wise spending.

Measured by the cash devoted to actual teaching per head, the purely classical school is easily the most inexpensive. Sanderson never momentarily lost sight of the fact that learning cannot be a substitute for character in the make-up of a valuable citizen. He had nothing but scorn for those schoolmasters who violently debate the relative merits of classics and science for providing a liberal education. He rated personnel above *matériel*. He gladly and enthusiastically recognised the magnificent things done for many boys by the able classical master, but he saw also how even the best utterly fails with many more. He could not acquiesce in such a condition, nor could he solace himself with the easy belief that the sports and social life of the school are a sufficient alternative—a belief far too widely held and too energetically maintained by some of the most loyal defenders of the Public School system. Sports and the social life have an immensely important share in man-building, but they do not, even for the least able boys, provide a substitute for school work. Sanderson believed firmly that for most boys natural science gives the greater scope during school years as well as afterwards, and he determined to give the chance to those at least for whom classics had failed. While he looked upon science in education as a weapon fashioned of highly tempered steel capable of the utmost keenness, he fully realised that it could only be hopelessly blunted, and made vain, by an unskilful grinder. He was angered when he found a teacher trying to teach in science—a relatively new and only partially understood medium—by methods

appropriate only to, and sanctified by age in, teaching in purely literary or mathematical media. The value of science for him lay in the new opportunities it offered.

Every boy must work : must work hard and successfully at something—and must undertake from the first in school as in games to give service, team work. Idleness he hated, almost frantically, and he determined that it should not be forced on any boy. Sometimes his crusade against idleness, which he would scent out, was a trifle over energetic, and occasionally some thoughtful boy of original mind would have his leisure unduly curtailed. But Sanderson took few chances, and he had his own methods of compensation.

Since boys in their natural endowments differ widely, widely different alternative routes must be explored. Until quite recent years, long after Sanderson began to make modern Oundle, headmasters, with but few exceptions, had given at the best a grudging place to teaching in science, and had thrown to their starved science sides boys who had conspicuously failed in classics. It is remarkable how many out of this jetsam were salved. The least discerning of these same headmasters did not shrink from proclaiming in school and out of it that the results confirmed their own prejudice. Sanderson, fresh from his work at Cambridge and at Dulwich, from the first decided that the science side was to be the equal and complement of the classical side, on its merits. He did not "pack" his science side, although it soon became by far the larger. Quite the contrary, as many a classical youth, aching to cross over either legitimately or in hopes of escaping a certain strict discipline, discovered, "When you have learnt to work where you are, we will consider the matter."

From the first also he insisted that the teaching should be alive, and highly practical ; not only practical, but experiments and manipulation work should concern themselves with matters of real importance. The apparatus itself must be the real thing also, and not laboratory makeshift. The boys' own work was what mattered, and he besought eagerly and diligently for outlets in "research work." In the earlier years mechanics, physics, and chemistry were fully and most successfully exploited. In 1908 experiments in teaching in biology, very soon expanded to include field work, were undertaken seriously. The new subject so developed was quickly found to lend itself admirably to work of the "research" type, to be peculiarly amenable—far more than chemistry—to "heuristic" treatment, to be an excellent and thought-provoking introduction to science for boys of preparatory age. Apart from that it fully justified its immediate exploitation when several boys who had hitherto failed to respond to the opportunities given them by classical, mathematical, physical, and even chemical work, but whose extra school efforts proved their ability, found their chance in biology. The new subject possessed other not inconsiderable merits : it made contact with certain outdoor pursuits of boys, many of whom were in the classical side, and thus a link was forged between the sides : it was closely related to a nearly universal interest of the boys' parents, and had a significance for their own distant leisure : but especially it fitted in with Sanderson's growing conviction that if he was to fashion the finest type of citizens, he must arouse and satisfy their interest in that group of subjects sometimes called social science.

The ideas he had worked out—and which he was developing to the day of his death—for the teaching in science he was to find could, with necessary modifications, be applied to teaching in some purely literary subjects, particularly history and English literature. He found lessons everywhere, and the benefits were mutual.

Like Admiral Fisher, he was not only an innovator, he was a resolute scrapper of obsolete impedimenta. Like him, too, he was a tremendously hard worker, sacrificing everything to the object he had in view. It was typical of him that one of his favourite hymns was "Come, labour on."

Those who would recall or conceive the winning charm and strong purpose of the man must see the exquisite miniature of him, gratefully presented by his old boys to Mrs. Sanderson, whose love and support meant great things to him, and therefore to England, throughout his Oundle days.

Above all, he had vision. That is why a recent reviewer of this book concluded his article with a sincere regret that fortune, blundering, had made of Sanderson a schoolmaster instead of a statesman—truly a short-sighted wish.

Several of his co-biographers refer to his lack of facile eloquence, to his habit of "wandering" in his addresses. The sudden changes of subject were indeed often startling and, not rarely, comic. Sometimes they had an inattention-shattering value. But whoever during the days of preparation had taken with him one or more short intimate saunters could usually recognise the cause. The actual address was then seen to be elliptical, he had omitted some of the steps in the argument of the projected address, steps fully disclosed during the week. A quite important link might be represented by no more than an apt illustration.

There are omissions in the book: that was inevitable by reason of the method; some appear to be due to absence of earlier preparation or to a too great hurry in production. Others, however, appear to be due to an "insular" attitude: editors seem not to look beyond the borders of Oundle, or perhaps they consider the advances made outside of little importance to their task. This ignorance or policy prevents their giving Sanderson his proper place; they cannot track the very powerful if quiet influence he has wielded amongst schoolmasters, not only in sending out waves of new ideas but also in giving comfort and encouragement to some science masters struggling under great difficulty along a parallel road. The writers tend to give him a position unnatural, unattainable, solitary—not a helpful representation to a younger generation of schoolmasters—whereas he was a far finer figure, a very great headmaster, moulding and influencing those around him, and being influenced by them. One to inspire missionaries, men with enthusiasm in full measure, pressed down and running over. Without such missionaries the value of his great experiment will decay and this book remain his inadequate memorial. Let its own mission be rather to convert all those in authority in English education, and thus prepare the way for his followers. Above all, may the modern Oundle School be so captained that this same glorious experiment, which he carried so far, shall be continued and mightily developed, providing the ideal training ground for the missionaries, and a beacon to the coming generation of headmasters.

Sanderson can die only if those in charge of it are content to let Oundle slip back to the commoner standard of English Public Schools.

E. I. LEWIS.

Society and Solitude.

By E. T. Campagnac. (Camb. Univ. Press. pp. xi+227. 8s. 6d. net.)

THE reviewers of Campagnac's books always note his distinction of style—the beauty of his language. And I fancy that this eulogium may be designed gently to indicate that the form is of more value than the substance of his thought: if by substance we mean a definite postulated "contribution," a discovery in research after the approved University mode, well, Campagnac may have to plead guilty. What I find, however, on reading his latest book, "Society and Solitude,"* is that the artistic setting in which his argument is clothed makes the argument itself new. Campagnac's "contribution" is unique: he reads and ponders on things educational and passes the harvest through the refining sieve of his own taste; every book he writes bears the impress of his sensitive touch on things spiritual and mundane, to an extent of which I know no parallel in educational literature.

But there are parallels outside our pedagogics if one could only recollect them. My memory has been haunted as I read these chapters by phrases of 17th and early 19th century writers, but I cannot hit upon the author who speaks with a like accent: De Quincy perhaps, or Jeremy Taylor; or John Foster in that introductory essay to Phillip Doddridge, which is so much better than Phillip. But no, these are not parallels: all I gain by turning to them is to recognise more surely that Campagnac is in the tradition of the best essayists and preachers, and of writers who were as much concerned with feeling and its outcome in appropriate form as with logic and argument.

Let us take an example, although any short extract is inadequate to give a fair impression. In the second essay our modern difficulties with specialisation are glanced at. "A man who should gain the whole world and lose his own soul would be little profited: but that ill-advised barter, it would appear, is one that he cannot effect. Are we to say, then, that he is free to effect the still less profitable exchange of his own soul, not for the world but for a very small part of it?" On every page passages of this type, with a rare turn of epithet or phrase, could be quoted, making one feel that style, deliberate style, is essential to the clarity of our pedagogic doctrines. Of course there are risks to be run when a writer of this type is so very conscious of what he is about and so obviously enjoys working out his analogies for all they are worth. Thus it occurs to him to compare the teacher to a devoted greengrocer: "If long and affectionate contemplation of the produce of the vegetable garden has screened his very mind with a cabbage-coloured veil he has no right to fasten however thin a gauze of green upon our eyes." As Campagnac himself points out, in his essay on Artists, "the danger of success is that we strive to maintain for ever a pose which we have once taken and found pleasing or useful." Such excesses are not a serious blemish in the case of "Society and Solitude": but I think that one reason why Mr. Campagnac is not read so widely as he ought to be is that the

*Cambridge University Press, 1922: 8/6 net.

teachers whom he addresses are liable to be put off by the elaboration of this ultra-personal mode of exposition.

For it must be emphasized that our author has something quite definite to say, as well as a quite definite manner of saying it. This book is really an exposition of principles of education, thought out in successive chapters, each linked to the one before. He first handles the definition and aim of education, then the organisation (Chapter III—Agents and Processes), each of these themes being related to an underlying conception of relations between the one and the many ; then the curriculum comes under review, with a characteristic emphasis on "Conversation with the world." Finally, after a critical study of freedom and individuality as conceived by Professor Nunn and others, he offers four chapters, which reach a very high level of exposition, on the teacher as an artist and as a free man. At the close the author becomes personal. "Will the charge be made that every line in this book is a plea for a sequestered and impractical mysticism ?"—and defends himself by insisting upon the practice of meditation. Certainly the reader should use the book for the purposes of meditation, for those occasions when ultimate problems of value claim our attention. He is here withdrawn from all the current crazes of the education market : not a word of experimental pedagogy, psycho-analysis, or education committees. Campagnac, in fact, is a preacher, not of the hortatory kind, but of the higher type that uses the pulpit for the ends of philosophy. He will not argue with you, for while he is addressing you through words his real effort is to catch the message, both in accent and substance, that has come to him, whether or no you can share it.

One practical conclusion suggests itself after reading these chapters. They handle more or less the nature and function of art, and in so doing they are in line with many other efforts to achieve a more harmonious and humane curriculum. It is rare, however, to find a teacher of education who is himself an artist showing his faith by his works. This lack of capacity greatly weakens the strength of our plea : we say and do not. Here, however, is a professor of education who of set purpose takes the art of literature—i.e., *his own style*—seriously. We may like the style or not, but there is no mistaking the conscientious endeavour ; we may even say that writers who never think about style at all may produce a finer art product than is offered in these pages. That, too may, be granted ; but it is necessary to insist that a man who is a teacher of youth as well as a writer of books is under a double obligation as regards style. In other words, our exposition of the function of art in education and in national life, let it be the art of literature or of painting or of dress, will fall dead unless we are concerned to put our theory into our practice. In this case most emphatically the style is the man, and theory expresses itself in form : with all the reservation of the artist he combines the "fanaticism" the devotion of the teacher. "Being an artist he is condemned to a divine loneliness ; their ways are not his ways, nor their thoughts his thoughts."

J. J. FINDLAY.

Some Aspects of Art Education.

Published under the Auspices of the National Society of Art Masters, with a Foreword by Sir James Yoxall. (George Allen and Unwin. Price 5s. net.)

WE are inclined to welcome any book in which we may hope to find a statement of the principles of art education. There are enough and to spare of little handbooks on the teaching of art which deal almost exclusively with the use of various mediums, but education requires on the one hand a statement of the principles underlying the subject, and on the other the study of psychological development—and for a setting forth of these matters we are still waiting.

The book before us is a collection of essays by some of the principal art masters of the country, edited by the Publicity Committee of the National Society of Art Masters, with the avowed object of advertising "the purpose and value of art education in the development of our national life." It is, however, really addressed, not so much to educationist as to administrative bodies, and the essayists display a creditable unanimity in their desire to see art recognised as a means of contributing to our national wealth and prestige.

The Society has spared no pains in advertising the book ever since its appearance, and it has received some favourable reviews. Issued from so authoritative a body, and bearing all the insignia of wisdom, we have a right to expect much of it, and shall not be inclined to mercy.

The essay on "Colour" by Mr. Barrett Carpenter is the most interesting in the book, though we could wish that he had given us something more of his conclusions rather than tantalising us merely with suggestions. Nevertheless it may serve to awaken interest in the subject, and in that case readers cannot do better than go to his little book on "Colour" in which he has set forth the results of his experiments.

Others of the essays touch on such subjects as "Creative Instinct in Education" (by W. G. Raffé, A.R.C.A., F.R.S.A.), "Drawing and Art as a Means of Expression" (by Chas. W. Hobbis, A.R.C.A.), "The Training of Public Taste" (by Frank P. Brown, A.R.C.A.), "A Minister of Arts" (by Professor P. J. Keelan, Officier d'Academie)—to select a few of the more interesting titles—but in all cases the treatment is too superficial to act as much more than an irritant.

The apologetic attitude adopted by nearly all the essayists—the self-consciousness concerning the importance of their work, the continual vindication of art on utilitarian grounds, the reiteration of its claims as part of our national industrialism—are all plainly symptoms of the disease they attempt to cure. The complaint is that art is no longer vital because it is not a part of the national life: the public feel no need for it. This need must be stimulated, they tell us, by making art itself utilitarian and ethical—these, it is assumed, being the only values we can accept.

By a healthy art period we shall certainly agree to mean one which is not only rich in artistic impulse but in which art has also a social purpose which makes it an integral part of the national life.

Greece before the end of the fourth century, and Italy during the early part of the Renaissance, furnish us with two excellent examples

of healthy artistic states. During both these periods the principal function of art was in the service of religion—to enshrine the gods, to acquaint the illiterate with their deeds, to minister to them by means of the various sacramental utensils, these were the essential functions of art (including craft). Its secular manifestations, however rich, were strictly subordinate to these, and even required a kind of religious sanction, as may be illustrated by the fact that the beginnings of portraiture were closely associated with ceramic art.

Whenever the art of a nation tends to become merely secular it appears to lose the essential character of its social purpose and fails to retain its position as an integral part of the life of a nation. That is not to say that art cannot be secular, or that there have not been artists—some of the greatest—whose outlook has been purely secular, but it is difficult to find examples of national artistic prosperity where art was not associated in the minds of the people with an expression of that which was spiritual. Greek art after the decline, the Roman period prior to the adoption of Christianity, and European art since the close of the Renaissance, cannot show an artistic integrity comparable with the religious periods.

Artists may be produced—but they have no essential social function, the public is unaware of any need.

Our friends the National Art Masters propose for a remedy to bring “art back into the everyday and usual,” then, they say, “the ethics of æsthetics” (whatever they may be) “will flourish.” “A true national art is convertible in terms with healthy expressive life”—but what is health save the unity of the organism? And what is its expressiveness but the differentiation of its functions? It is this that makes art an oligarchy, not a democracy; it must be appreciated in essence (as a spiritual value) before it can “pervade our everyday life.” Mr. Fowkes tells us that “there is an atmosphere about the institution (*i.e.*, the Art School) not hostile to picture painting pure and simple but dominating the thoughts of all its members with reminders of more important things”; but to propose a purely industrial art, or one which is to be primarily industrial, is to parallel proposing a religion which is to be purely pragmatical—it would lack the very essence.

We cannot indeed return to those ancient, more harmonious because less complex conditions, but is there no equivalent?

“Fine” art, it is true, has become more and more highly specialised as the relation between it and its social purpose has gradually become slacker. It has come to such a pass that there would seem to be a great gulf fixed between the artist and his public—it is impossible for the public to understand modern art, and the artist himself accepts the position with pride, except perhaps, so far as the financial situation is affected.

To the best of my belief such conditions have not been known before in the history of art: the psychological development of the artist and the sociological development of Europe have made it inevitable, and our best hope is to look for light on the question from the East, to whose art our own begins so closely to approximate.

The Eastern mind is capable of recognising Beauty as a spiritual factor having a value of its own underived from Truth or the Good, therefore art holds its own there in the life of the nations—or did until European influence intervened—and the relation between artist and

public remained intact and undisturbed by the comings and goings of religions. In Europe we have seldom given Beauty this fundamental spiritual value, and hence its rise and fall has been largely conditioned by its relation to religion.

The more highly organised we become, the more self-consciously, I suppose, do we have to deal with our problems: the present situation is admittedly an "impasse," but I cannot feel that the programme outlined for us by the Art Masters does more than treat the symptoms while it ignores the root of the disease.

A distinction is usually accepted between art and craft; this distinction the writers do their best to slur over, deny, or even transpose in value, making the former a mere by-product of the latter. I believe the reason of this to be in the first place due to the lack of understanding between artist and public, upon which I have already touched, and which is ruining the prospects of the pictorial artist and driving him into other branches of the profession, which, in compensation to himself, he naturally proceeds to value more highly; in the second place to the fact that the crafts are branches of artistic work in which mediocre talent can attain a relatively high degree of perfection, and it is therefore to the advantage of the majority to magnify their virtue. This situation reminds us of the classic myth which tells of a giant whose hospitality depended on the agreement between the height of his guest and the length of his bed: those who were too tall had to be lopped; those who were too short had to be stretched; only those who fitted exactly breakfasted on the following day. There will be no breakfast I fear for artists, for few worthy of the name will fit the bed herein made for them.

The art produced by such a solution of the problem is, however, simply a regression to a type appropriate to an earlier age of the world, when the means of living were an insistent pressure and formed the natural focus of man's activities—it is scarcely one appropriate to a highly complex and, we hope, aspiring state of evolution in which the focus of interest has shifted, at least in some degree, towards more spiritual things.

There is more hope in the suggestion, tentatively made and undeveloped, that the public can be educated in understanding if not in execution. A comparatively small section, I think, is totally unmoved by any form of art; a fairly large section like it, but like the wrong things; a rather smaller section like the right things for the wrong reasons.

The first we need not consider, for they know not what they lose; but the two others may be the raw material of a great art-patronising public. Probably most of us who flatter ourselves that we now like the right things in the right way can remember the stages when we were children, and later, of liking the right things in the wrong way, or even—looking backward into the dim vistas of the first picture books—of liking altogether the wrong things! Even the most exquisite of art critics has but thus to consider his past to acquire hope for humanity, for the growth of taste cannot be entirely dissimilar from that of the individuals it produces, though it may lag behind.

Of the manner of the book it is more difficult to speak—few who wield the brush find the pen as ready to their hands—consecutive thought perhaps is too foreign to the mind that deals habitually in spatial relations. "The gems of literature will never sparkle for eyes which have not been

trained to perceive beauty. Painting and poetry are blood relations. Fine writing and fine drawing appeal to the same sense," says Mr. Roxby Hall, himself apparently having been trained neither in clarity of thought nor in the rudiments of psychology.

Again, we are told by Mr. Hobbs, that "Drawing when properly taught, develops the reasoning powers and makes for a logical habit of thought. It also makes one analytical . . . and we claim that a mind trained through drawing in the power of comparison and selection is better equipped to deal, not only with artistic things but with other phases of life as well"—as though the campaign against formal training had never existed; indeed, anyone desirous of more examples with which to weight his missiles against these dogmas may cull them plentifully from the pages of this book. The ignorance displayed on subjects not, they would be the first to claim, so very widely separated from their own—such as the writing of the English language—shows that their training has left at least some regions of the mind a little barren, and the dogmatism of their statements touching psychology could only be possible to those ignorant of the subject or profoundly insensitive to the problems involved.

We give them credit for being specialists whose profession must take too large a toll of time and energy to leave surplus stores for subjects which each demand as much; nevertheless we would ask them to step with caution and modesty on ground where angels fear to tread.

DIANA M. LALL.

Book Reviews.

Principles of Secondary Education : by A. Inglis. pp. vii + 741. 10s. 6d. net.
(Harrap and Co., Ltd.)

If there still remain, as I fear there do, teachers and others concerned with Secondary work who question whether professional studies in reference to it have accumulated any considerable body of reliable facts and consistent doctrine, this would be an excellent book to put into their hands. Professor Inglis has taken a most comprehensive view of his subject. He has, it is true, definitely refrained from dealing in detail with the methods of teaching the various school subjects. Such a treatment, he says, is to appear in later volumes of the series of the Riverside Text Books in Education which Professor Cubberley is editing. The present volume is divided into three parts. The first discusses the pupils, the raw material of the school work ; the second part is concerned with the Secondary School as a social institution ; and the third part has special reference to the curriculum of the Secondary School. In Part I there is, naturally, a great deal of statistical matter. The physical traits of the children are dealt with, and there follows a psychological discussion of mental endowment and development, with a useful chapter on individual differences. The discussion of such topics as the distribution of pupils by grades, their elimination by age and grades, the influence of home conditions, the expectancy of stay in the Secondary School and so forth, have primary reference to American conditions, and the English reader will sometimes have some difficulty in interpreting them into English equivalents. Sometimes also, one must confess to feeling that the summary of statistical enquiries is given without an adequate discussion as to conditions and reliability, but it is perhaps unfair to press this point when Professor Inglis has compressed so much into one volume. Under the heading "The Institution and its purpose" a great deal of historical matter is given chiefly, but not entirely, in reference to American Secondary education. The correlation of historical with psychological and general discussion is not common, but none the less welcome. Most valuable of all, as it seems to me, is the part on the means and materials of Secondary education, in which the value and limitations of the various subjects of the curriculum are critically considered. The chapter dealing with the classification of values is very clear, and a definite analysis of this type would, if constantly borne in mind, avoid a great deal of confusion in thought on educational questions. In particular I welcome Professor Inglis' calling attention to some of the characteristic fallacies in much educational thought—for example, that which fails to distinguish between "fields of knowledge or skill which are of inestimable value to society and to civilisation in their extended development through relatively few specialists, and fields of knowledge or skill which are directly valuable for all or a majority of individuals." In reference to many of the topics discussed throughout the book one finds what one so often finds with writers in the States, a neglect of important contributions to the subjects discussed, published in this country. But America is turning out such a large volume of literature and research on educational questions that it is perhaps hardly to be wondered if their students of education do not find time to appreciate fully what is being done on this side of the Atlantic. C.W.V.

First Year French for Adults : by Hargreaves.

(George Harrap and Co. 1s. 6d.)

This should prove a useful little book for evening classes. The grammar is well chosen for a first year's work, and the rules clearly explained ; but a more "inductive" method might have been used with advantage. The reading matter is interesting and suitable, though the style is at times unnatural, on account of excessive use of the past historic tense at the expense of the perfect. The reform exercises are an excellent feature of the book. K.E.C.

The British Isles of To-day : by J. F. Unstead.

180 pages. 16 illustrations.

This small book gives a concise and interesting account of the geography of the British Isles. In addition to following the Regional Method the author has wisely adopted Mackinder's distinction between Metropolitan and Industrial England. The characteristics of the chalk and limestone districts are especially well handled, and the influence of history and economics is shown admirably in Mr. Unstead's treatment of such towns as London, Bristol, and Liverpool, and in the development

of the woollen and fishing industries. The book is suitable for the upper standards of the Elementary School and middle classes of the Secondary School, and is easily the best junior book of the British Isles on the market.

H.A.H.B.

Modern Developments in Educational Practice : by John Adams, M.A., B.Sc., LL.D. 302 pp. (Univ. of London Press, Ltd. 6s. net.)

The teaching profession has already extended a welcome to this most recent addition to the writings of Professor Adams. Workers in Education who have taken pains to study the claims of modern methods will appreciate this attempt to survey the recent changes in Educational Practice, and to discover the inner meaning which gives direction to movements seemingly scattered and unrelated. It is unfair to discriminate between the chapters when the writer has achieved such success in weaving the varied topics into a completed presentation, but it may not be harmful to mention two chapters which strongly appealed on the first reading—viz., Chapter II, which indicates the broad lines of solution of the problem of vocational and cultural education, and Chapter VI, which, under the challenging title “The Knell of Class Teaching,” sets out in clear terms the way in which the group can be a teaching unit and no mere herd driven by external authority. The practical conditions of the schools are by no means neglected, and the acting teacher will find popular objections bravely faced on open ground. By helpful directions and references the book will also serve as an introductory study of modern methods.

J.T.

Remembering and Forgetting : T. H. Pear.

(Methuen. 1922. 7s. 6d.)

The first draft of this book, the writer tells us, was made when “it was necessary to compress into a few lectures enough information about ordinary remembering and forgetting to enable officers of the R.A.M.C. to estimate the abnormality of these functions in their patients. . . . More than three years have now passed, and the temptation to add to these lectures as new information has arrived from time to time has been irresistible. These additions have naturally obscured the original outlines of the book. In no sense is this a text-book upon the subject of Memory.” Six chapters, out of the total of thirteen, are occupied with the study of Images, and four other chapters are given to Dreams; but when we have finished the book, if no very unified impression remains as a picture of Memory, at any rate we have had flashes of light from many different directions, and have been stimulated to thought on many profitable lines.

Professor Pear has a gift for vivid phrasing and analogy which one reader at least finds most refreshing and helpful. William James gave us such sketches in profusion, and most subsequent writers have lived on what he gave; but Professor Pear is in the true line of succession and scatters a new supply. One reviewer of this book said that the study of Memory would not be advanced by comparisons drawn from gramophones. Yet an illuminated acquaintance with the subject, for the present reviewer, has been delightfully forwarded by just these comparisons: the needle made of fibre more often than of steel (p. 7), and the effects (p. 4) when the record or the mind is “cracked.” His other great merit, as shown in these lectures, is the power of seeing the universal in the particular, and showing the peculiar or sensational as a special case of something wider and more homely. I would instance his suggestion (p. 114) that the “secondary elaboration” of a dream may be “only the customary manner of interpreting any object or thought which has been imperfectly apprehended,” and his account of “repression” (p. 147) in connection with the “attending away from” which all “attending to” implies.

“Many psychologists have recently been among the tempests of the mind. From them they, like Franklin’s pupils, have learnt that the lightning-displays are but striking appearances of a force which exists, in a quieter form, everywhere. Yet while some physicists remained to study the rough weather, others went back to apply the new knowledge to everyday life. And in this respect the parallel between physics and psychology does not appear as yet to be sufficiently complete” (p. 177). We welcome what Professor Pear has done in this direction, and hope that he will soon do more.

H.W.

A Practical Course in Intermediate English : E. Albert, M.A. (New edition, revised and enlarged. Harrap and Co. 2s. 6d. net.)

This book should be of real service to the private student who wishes to study from the beginning the structure of his language, and who is in need of guidance in his

own use of English. The relation between the study of language and literature is clearly marked by the introduction and analysis of well-chosen passages from the great English prose-writers (*e.g.*, Landor, Hazlitt, Charles Lamb). It was, possibly, a mistake to attempt to handle the delicate subject of poetic form in a manual of 280 pages—certainly the paragraph which Mr. Albert devotes to metre is the least satisfactory in the book ; but if the student passes lightly over this section he will do well not only to read but to inwardly digest the last chapter on Etymology. It will help him to a more accurate use of words, and it may enrich his interest in the study of language.

E.M.J.

Short Essays by Modern Writers : S. Clegg.

(Longmans, Green and Co. 1s. 6d. 119 pp.)

This collection of short essays and reviews should be of real assistance to the teacher who tries to make his pupils realise that English is a living language and will induce some to turn eagerly to the various magazines from which they were culled in the hope that they will find others as interesting. One point calls for comment ; more than half the essays are dated 1922, seven only being obtained from those written in the years 1908 to 1922, and two are undated.

A.E.C.

A Class-book of English Elements : H. Finnemore.

(Longmans, Green and Co. 2s. 6d. 158 pp.)

The first half of this book is devoted to formal grammar and reveals the need for a thorough revision of the subject ; what meaning will a young child give to the definition of a verb as " a word that makes an assertion " or an adverb as " a word which tells more about the verb " ? In Part II ten pages are devoted to a Short History of the English Language, ten to punctuation, twenty-six to composition, including exercises and the remainder to common errors, idioms, synonyms, etc.

A.E.C.

Introduction to the Use of Standard Tests : S. L. Pressey and L. C. Pressey.

(Geo. G. Harrap and Co., Ltd. 6s. 263 pp.)

This book contains an enthusiastic account of the value of tests and a brief account of many of the tests that have become standardised in the States. From an Assistant Professor of Psychology and an Instructor in Psychology the reader is entitled to expect a critical account of the fundamentals, but this book confirms an impression that too many books are written in order to prove the modernity of the writer. The following quotation will serve to illustrate a superficiality of reasoning which would be criticised severely if made by a student in many English Universities. Writing about the Stanford Binet Tests, the authors produce this passage : " As may be inferred from the size of the Manual of Directions, it is not easy to learn to give the Stanford Binet Scale (*sic*) as may also be inferred from the size of the manual, scoring is intricate, involves many special rules, and is intimately tied up with special directions for giving." ! With one statement we are in cordial agreement : " As soon as possible obtain some first-hand experience in work with tests." A.E.C.

Parenthood and Child Nurture: Edna Dean Baker, M.A.

(Macmillan. 7s. net.)

Written primarily as a text-book for the Parents' Training Class, which the author suggests should be organised by the Church, this is a useful book to put into the hands of all who come into touch with children, either in the home or school. It is comprehensive in scope, dealing with the nature, development, and needs of children from birth to the age of eleven. The author writes from a wide experience of children, and the book is a plea for the sympathetic understanding of and co-operation with Nature's provision for the child's development. By reason of its purpose and of the wide field it covers, the book contains little technical or detailed psychology ; but for the amateur who may be inspired to further study, useful suggestions for reading and thought are appended after each chapter. Not the least valuable part of the book is a very complete bibliography, giving lists of technical and less technical works on psychology, child study, and general education, fiction dealing with child study, and books to aid the teacher in guiding the child's interests in the realms of art, music, literature, nature, and also his constructive and dramatic activities. This alone would make the book a useful addition to the College library. Strangely enough, in an educational work published in 1922, the writer makes no mention of the " new " psychology or its exponents, and the book is entirely free from its

language. Despite the absence of instruction about the "sub-conscious," "complexes" and the like, and of warnings against "repressions," one feels that the parent following the lines indicated in Miss Read's book will give his child a sane and thoroughly "safe" education.

L.E.S.

Memories of the Future : by Ronald A. Knox.

(Methuen and Co. pp. 244. 7s. 6d. net.)

Writers of political and social forecasts have usually been more concerned to display the results than the processes of social change. They ring up the curtain upon the stage of posterity fifty, two hundred, or a thousand years hence, but take little trouble to trace the transition to the strange world they represent. In Father R. A. Knox's "Memories of the Future" we have therefore not only a masterpiece of wit but a highly original essay in satiric criticism of present-day tendencies and movements. The book is supposed to be the autobiographical memoir of "Opal, Lady Porstock," written in 1984, and giving her reminiscences from 1917 to 1972, "the eve of the great war." The air of verisimilitude and the style of the society memoir-writer are admirably sustained, and through all his satire upon modern thought and heresies in religion, politics, education, literature and art, the author's deftness of touch does not fail until the close, when his own personal bias is inartistically (and ineffectively) obtruded.

In a book that clamours to be quoted, some of the best passages depict the educational systems of the future. Not only, we learn, is the "freedom" tendency to show a marked increase during the next decade, but (a more serious matter) the status of the teaching profession is to be seriously lowered, while pupils will be paid to be taught out of the public funds. Thirty years hence we have Dr. Tulse's boys' school run on "the indirect method," based on the idea "that the motive-force of the boy mind is an opposition-loving reaction from the teacher-stimulus."

"The walls of the classrooms were plastered with all sorts of useful information about history and science; and Dr. Tulse's assistants had orders to say at frequent intervals, 'Don't sit there staring at the wall, look at your books,' with the result that the pupils always stared at the walls, 'drinking in information,' the head-master would enthusiastically say, 'not through the oesophagus but through the pores' . . . Sometimes a master would come up to a boy and whisper into his ear Boyle's Law, or the rules for doing conditional clauses in Greek, and tell him to be very careful not to pass the information on, as it was strictly private and not quite delicate. The whole institution would talk of nothing else for a week."

The "editor" assuredly has no need to plead, as he does in his humorous preface, for patience with his nightmares. He has taken us for a most exhilarating gallop upon them.

J.H.

Essays of To-day : Edited by F. H. Pritchard.

(Harrap and Co., Ltd. pp. 286. 2s. 6d. net.)

This anthology is designed, according to the preface, in the hope that "the presentation of modern questions in a modern way will be of particular interest and value to pupils nearing the time when they must exchange the seclusion of the class-room . . . for the hurly-burly of affairs." One is inclined to doubt whether all the essays included really offer much guidance on "modern questions" to the young reader, but the selection has been made with care and sympathy and affords delightful reading. Thirty-four essays represent the writing of thirty-four authors of differing tastes and temperaments. The names of Joseph Conrad, A. A. Milne, W. B. Yeats, E. V. Lucas, Hilaire Belloc, and Alice Meynell, chosen from the six sections into which the essays are divided, will give some indication of the fare provided. The Introduction is helpful and the appended exercises add much to the value of the book for school purposes. The danger of dealing with contemporary literature in the schools of to-day lies in the fact that a knowledge of it is often only acquired at the expense of almost total ignorance of already recognised classics. If this danger can be avoided, then such an anthology as "Essays of To-day" should not be ignored.

F.M.B.

Outlines of Child Study : Ed. by Greenberg for the Federation for Child Study.

(Macmillan. 260 pp. 9s.)

This is not a book on child study, but a guide to would-be students of children. It is comprehensive in scope, containing chapters on such subjects as "Toys and Tools," "The Use of Money," "Co-education," etc., in addition to the topics usually

dealt with in Child Study manuals. Each chapter consists of an introductory paragraph, an outline for study, and a list of references. The "outlines" are carefully planned, suggesting every aspect of every subject, and if followed out in observation and reading, each one would lead to a very thoroughgoing study of the subject. The references are carefully selected and graded, and render the book an invaluable aid to the individual student or to study-groups.

L.E.S.

Plant and Flower Forms : by E. J. G. Kirkwood.

(Sidgwick and Jackson, Ltd. Price 7s. 6d. net.)

A series of eighty full-page plates of typical plant forms, floral diagrams, sections, etc., with descriptive notes, intended primarily as an accompaniment to the ordinary textbook. A very useful and exceedingly clear collection of diagrams, of interest not only to the professional student but to the amateur collector of flowers and plants.

Psychology and Politics : by W. H. R. Rivers, M.D., D.Sc., LL.D., F.R.S., with a prefatory note by G. Elliott Smith, F.R.S., and an appreciation by C. S. Myers, F.R.S. (Kegan, Paul, Trench, Trubner and Co. pp. 180. Price 12s. 6d.)

This is one of several posthumous volumes which prove the great mental vigour of Dr. Rivers in the last years of his life, and which intensify the feeling of the immense loss which psychology has suffered in his death. The chapters largely consist of lectures given by Dr. Rivers on the following topics:—Psychology and Politics; Instinct in relation to Politics; The Concept of the Morbid in Sociology; Socialism and Human Nature; Education and Mental Hygiene, etc. All these are remarkable for their clarity of exposition and for suggestiveness, combined with that calm, critical, essentially scientific attitude which was so characteristic of Dr. Rivers. Whilst he was too cautious to carry any of his ideas far at this stage, no student of social and educational problems can fail to find much that is illuminating in this work.

C.W.V.

Psycho-Analysis in the Service of Education : by O. Pfister.

(Henry Kimpton, London. pp. 176. 6s. net.)

A readable, popular account of psycho-analysis, though often redundant and too rhetorical. The title is misleading if taken to mean the education of the young, and though one of the chapters is headed "Pedanalysis," very little is said about the analysis of children—perhaps because there is little to say, except, as Pfister himself says, that to call the attention of children to supposed or real unconscious impulses is a dangerous experiment.

The Companion Shakespeare: King Henry IV, Part I. With a Commentary by Kenneth N. Bell, M.A. (Christophers. Cloth boards 1s. 6d.; limp cloth 1s. 4d. pp. 142.)

This is a further volume of the edition of Shakespeare which was commenced by the late Professor Green. Mr. Bell follows most successfully along the lines suggested by Professor Green, and as before we can commend the volume most warmly to the notice of teachers of English.

Horace and his Influence : by Grant Showerman.

(George G. Harrap and Co., Ltd. pp. 172.)

A good general and very readable exposition of Horace's thought and philosophy. Perhaps more translations of typical lines would have been welcome, and footnote quotations of the originals would have added to the value, but these are minor points, and as a whole we heartily welcome the book as a valuable aid to classical studies, as well as to lovers of literature.

The Reading Process : by William A. Smith, University of California.

(The Macmillan Company. pp. xii and 267.)

This book gives a summary of the results of a very large number of experiments bearing on the reading process and discusses their bearing on the method of teaching. It is significant of the great interest which has been shown in recent times in the analysis of the reading process that the author can deal with so many articles on the subject and give so many references. In spite of this, however, one notices a neglect of the work of Meumann and of several European investigators. Though the estimate of the results of the individual enquiries seems sound, one notes occasionally a lack of co-ordination between results given in different parts which do not appear consistent with one another.

The Making of the Western Mind, A Short Review of European Culture:

by F. Mellin Stawell and F. S. Marion. (Methuen. pp. 353+xi. 7s. 6d.)

This book is largely written by the first-named author, the other contributing three particularly valuable chapters on Science and Recent Developments ; but the preface states that the authors find themselves in general agreement. Broadly speaking, the book may be said to review the general trend of thought and practice in Western Europe with the cultivation of freedom, progress, and individuality as the central concept therein. The dominance of a main concept of this type naturally results in certain limitations, but in our opinion this book avoids the disadvantages to a remarkable extent, and the gain, from the point of view of continuity in the underlying philosophy of history, is evident. Not only to the student of history but to the intelligent general reader the book will afford much that is suggestive and of deep interest. One point of special interest to our own readers will be the parallel drawn between the development of modern education and that of progressive thought in political evolution. A nice humour is not lacking in many parts of the book ; witness, for example, the story of Gregory, who, himself ignorant of Greek, spoke with pain and astonishment of clergy so far forgetting themselves as to teach grammar "when even a layman, if really religious, would avoid such matters."

The Poetic Mind : by F. C. Prescott.

(Macmillan, New York. 1922. pp. xx+308. Price 12s. 6d.)

This book should appeal strongly, both to those who are interested in literary criticism and to those who are interested in the psychology of aesthetics. Indeed, it discusses more fully than any other book we know the border-line problems which are common to the psychologist and the literary critic. The author's intimate acquaintance with the life and mental dispositions and characteristics of the great poets is obvious, and at the same time he shows a decided capacity for psychology and a familiarity particularly with the newer psychology of the unconscious. Mr. Prescott's main thesis is that there is a marked resemblance between the creative capacity of the poet on the one hand and the mental capacity involved in dream structure and in the outbreaking of impulses, thoughts, and imaginations which have been previously only vaguely conscious or which have had their counterparts in the unconscious. He discusses in turn the poetic vision, the primitive type of imagination found in childhood and primitive thought, the fulfilment of unsatisfied desires in dreams and in the writing and reading of poetry, the place of imagery, and the significance of symbols and figures, concluding with an interesting discussion on "poetic madness" and catharsis. There is one rather serious error in the psychological treatment of the book, and that is in the tendency Mr. Prescott sometimes shows to identify "imagination" with "imagery." With this warning in mind the student and teacher of English Literature can hardly fail to find a great deal that is suggestive and helpful in the volume.

C.W.V.

Adolescence and High School Problems : by R. W. Pringle.

(386 pp. 10s. 6d. net. G. G. Harrap and Co.)

There was a place in the literature of education for such a book as Principal Pringle has now written. Much has been said from the physiological and psychological sides on the subject of adolescence, but less has been done to bring the results of observation and recent research into relation with the means of education during that particularly critical time when the "young person" is often such a source of anxiety and misunderstanding for those around him. The custom of "muddling through" this period is not justifiable on any ground. Ignorance and "laissez-faire" on the part of parents and guardians have, one feels sure, been responsible for much unhappiness and wrong treatment among adolescents. "It is certainly not a matter of tiding youth safely through these critical years, but it is a work of character-building (commonplace as this sounds), and it requires an active instead of a timid passive attitude." Mere reading in itself will not correct the common attitude. "Adolescence and High School Problems" describes the phases that present themselves before the careful student of young people, and it does this in a manner which shows that the author has the normal cases clearly in mind and is writing for the mass of those interested in Secondary Education. The reader can follow the text with the feeling that he is dealing with realities of every-day life and getting suggestions which will assist him in his own problems and not be of help merely in the few very abnormal cases chancing to fall in his way ; thus he is tempted to further inquiry and is helped in the adjustment of his own attitude in a most important matter. One-third of the

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book is devoted to the "Psychology of Adolescence"; in it the principal views of many experts have been brought together and focussed on the problems treated in detail in the remaining two-thirds. Stanley Hall, William James, Royce, Palmer, Fiske, and Sargent are among those whose thoughts are brought into the proportioned picture set out in Part I, in the study of which one need rarely lose sight of the practical issues in school administration or miss the danger signals in adolescence. Part II, "High School Problems," loses none of its usefulness for readers on this side of the Atlantic by having been evolved from lectures in Illinois State Normal University; matters of common importance are dealt with—for example, Social Activities, Literary Societies, Debating, Journalism, Pupil Finance, Athletics and Assembly. In the discussion of these topics the author points the way for the social and moral moulding of the pupils' developing qualities. The chapter on Sex Education is short but helpful, followed as it is by one on Moral Education, in which the author's answer to the debated question : "Can morality be taught?" emphasises the possibility that an attempt at formal instruction may result in producing a veneer of moral ideas rather than an all-permeating motive force in character. "What makes a man good? It is being good; and men are good, if at all, under good conditions and good influences." Dr. E. O. Sisson is quoted: "Human studies may be quite dehumanised either by intellectual abstraction or by spiritual indifference, and may then become rather immoral by accustoming youth to look with untouched heart upon ideas and images that ought to arouse the emotions of any true man." The author's thesis is "that moral education, especially during adolescence, is a social process." "Education of the adolescent must be of the heart as well as of the intellect." The book shows a sane outlook on the problems of adolescence. Many suggestions invite further inquiry—e.g., the value and effects of moral instruction as such; the relation between the onset of adolescence and certain kinds of school work, to mention two only. Wisely written and pleasant to read, "Adolescence and High School Problems" is likely to prove helpful to parents as well as teachers.

A.P.B.

The Religious Training of Immaturity : Constance Maynard.

(102 pp. Price 2s. 6d. N.S.S.U. Every Teacher's Library.)

This is a book which lovers of children will read with pleasure. In a series of short chapters, each of which is of the nature of a meditation, the author sets out her ideas of the position the child or young adolescent holds in the family and the duties that in consequence devolve upon those responsible for its upbringing. One must not be led by the title to imagine one will find any formal curriculum set forth for the guidance of the teacher; the work is rather of the nature of an attempt to inspire and encourage those concerned in the education of young people in a humane and Christian spirit.

A.P.B.

NOTICES OF ARTICLES IN FOREIGN JOURNALS.

Journal of Educational Research, Illinois. Vol. vii. April, 1923.

In an article on "The Relation of General Intelligence to the Persistence of Educational and Vocational Plans of High School Pupils," William Martin Proctor and Helen Ward give a survey of the subsequent careers of 272 High School pupils whose choice of vocation they had recorded four years previously and whose intelligence quotients had been calculated then. The vocations are classified into five groups, thus: (i) Higher Professional Executive Positions; (ii) Managerial and Higher Commercial; (iii) General Clerical and Commercial and Skilled Labour; (iv) Semi-skilled Labour; (v) Unskilled Labour. They draw the following conclusions from their survey:—

"Among those in occupation 40 per cent. were employed at tasks ranking equal to or better than their ambitions, while 60 per cent. were in occupations of lower rank. More girls than boys were following vocations of their original choice."

"There appears to be a closer relation between intelligence and persistence in educational plans than between intelligence and persistence in vocational plans."

"In terms of median intelligence quotients, those in educational institutions surpassed those in occupations by 10 points."

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"The vocational ambitions of those in educational institutions ranked higher than the vocational ambitions of those now in occupations.

"The data presented in this study tend to support the thesis that information regarding educational and vocational plans of high-school pupils while they are still at the high school has more significance than has heretofore been attached to it, and particularly that measurements of general intelligence may be of great value to the vocational and educational counsellor in his work."

Journal of Educational Psychology. Baltimore, April, 1923.

G. M. Ruch and Wilhelmine Koerth, in an article: "Power v. Speed" in Army Alpha Tests, describe an experiment in which the influence on students of the speed test and double and unlimited time was given. They draw the following conclusions:—

"Admitting that Army Alpha is largely a SPEED test, the fact that single time results correlate 0.966 with double time, and 0.945 with unlimited time, indicates that the SPEED factor does not seriously invalidate the test. In fact it can be shown that the probable error of estimating scores for double time and for unlimited time from scores earned in single time is about 6.7 and 8.4 score points, respectively.

"Increasing the time allowance does not permit dull subjects to equal the scores of the more intelligent subjects. In fact, the mean of the low group for unlimited time was still well below the mean of the high group for single time (Figures 1-3). Whether the *differences* between low and high groups are decreased or augmented by increasing the time limits cannot be definitely answered from the present data because the scores of the high group were too near the maximum possible to allow equal opportunity to both groups. The Army figures seem to indicate that in terms of absolute scores, the brighter subjects improve somewhat more than do the dull.

"The only test which was invalidated by the increased time limits was test 3 (Practical Judgment). Test 1 (Oral Directions) is also not very satisfactory. Test 2 (Arithmetical Problems) and Test 4 (Synonym-Antonym) became even more discriminating with added time.

"The present results substantiate the important findings of the earlier Army investigation when proper allowance is made for the fact that Alpha is far too easy for the good students of the college group."

L'Education. Paris, April, 1923.

Dr. Tissié, President of the French League of Physical Education and of the International Medical Union of Physical Hygiene, in an article entitled: "Le Luxe et la Nécessité en Education physique" criticises the "chauvinistique" and "combatif" influence in French Physical Education and advocates systematic regularity and carefully planned physical exercises aiming above all at the "life of the cell," such physical training having priority also to sports.

In an article on "L'Héliothérapie Préventive," by Dr. Armand-Delille, there is described an experimental school in which repatriated children in the last year of the war, whose mothers were tubercular, were treated in an open-air school, and in particular were exposed half-naked to sunshine. Remarkable results, both physical and mental, were claimed. One important point emphasized is the necessity for only a GRADUAL exposure to more and more sunshine.

LIST OF BOOKS RECEIVED.

The Children of England: by J. J. Findlay. pp. 235 + vi. 7s. 6d. (Methuen.)
The Evolution of the Conscious Faculties: by J. Varendock, D.Litt., D.Sc. pp. 259. 12s. 6d. (Allen and Unwin.)
Plant and Flower Forms: by E. J. G. Kirkwood. pp. 80 + xvi. 7s. 6d. (Sidgwick and Jackson.)
Exercises in Thinking and Expressing: by J. W. Marriott. pp. 166. (George Harrap and Co.)
Dryden and his Poetry: by Allardyce Nicoll. (The Poetry and Life Series.) pp. 151. 1s. 6d.

NOTICE.

The first number of THE FORUM was for a time out of print, and we regret if subscribers found a delay in the supply before the second reprint was available. Copies of No. 1 can now be obtained. The contents are as follows :—“The Training Value of Exact Studies,” by Helen M. Wodehouse; “A Nineteenth Century Experiment in Education,” by Sir Michael Sadler; “The Correlation of School Subjects,” by H. G. Stead; “Education and Spiritual Realities,” by H. Bompas Smith; “Some Undesigned Effects of Educational Administration,” by R. Cary Gilson; “Experiments in Individual Work,” by E. J. G. Bradford; “The Value of Intelligence Tests in Scholarship Examinations,” by R. R. Dobson; “German Education since the Revolution,” by M. F. Liddell; “Citizen Training in Germany,” by Margaret Steppat; “The Play Attitude in the Work of Teaching,” by A. G. Hughes; “Gentile and the New Education in Italy,” by A. J. Monahan; Book Reviews.

AN APPEAL.

The Caldecott Community, which is the subject of one of our articles in this number, is threatened with extinction for lack of funds. The parents of children, even from the poorest homes, contribute substantially, but the continuance of this interesting experiment is largely dependent on private subscriptions.

The Editor of “The Forum,” on behalf of the Community, will be glad to receive any contributions.

Forum of Education.

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The Forum of Education.

VOL. I., No. 3 (NEW SERIES)

NOVEMBER, 1923

Selection by Examination.

E. J. G. BRADFORD.

" Of the many evils attaching to the examination system, the more than human fallibility of the external examiner is the most monstrous What then is to be done? . . . largely abolish the examiner."

" . . . my experience leads me to the decision that the schoolmaster, with his likes and dislikes among the pupils given into his hands, is often the foe of the deserving but uncouth or unpopular schoolboy I have even known examination marks manipulated with that object by the headmaster of a great public school. . . . "*

THE chief points of view advanced in controversies about examinations are that, either the teacher is dishonest and therefore cannot be trusted, or the examiner is not omniscient and likewise cannot be trusted. Both sides admit that the schoolmaster is not free from those sudden upwellings from the subconscious, those little disturbances which occasionally seem to short circuit our rational activity and make us appear to others either biased or dishonest. Both sides will also admit that examiners are fallible. The real point at issue is the degree of fallibility; one side maintains that the examiners' fallibility is "like all other classes of men," while the other side claims that his fallibility is "more than human." Fortunately or unfortunately, no standardised norms of "human fallibility" have up to the present been published, so that the controversy cannot be decided before a Court of Norms.

The examination paper, the pupil, the schoolmaster and (or) the external examiner, each of them introduces a source of variability. In this article we shall be concerned only with the variability from the two last-named sources. An attempt will be made to show how far the variability in marking is due to differences in standard and how far it is due to other causes which are operative only intermittently, e.g., likes and dislikes or headache.

If the schoolmaster and an external examiner mark a set of papers, a comparison of the two markings will show two things, first the difference of standard, and second the variability due to other causes which do not apply to all the papers. If a large number of schoolmasters mark the papers which are also marked by one and the same examiner, a comparison of all these markings with that of the examiner will give us a measure of the bias of the examiner, and also a measure of the mean difference of standard among the schoolmasters. By collecting the differences in marking first with due regard to sign and then regardless of sign, we shall obtain a rough estimate of variability due to (1) different standard and (2) fluctuating influences. Having obtained these two measures we shall

**Times Educational Supplement*: Letters to the Editor. May 5th and 19th, 1923.

be in a position to consider the general effect of the fallibility of the examiner and the dishonesty (?) of the schoolmaster on the chances of the unfortunate examinee.

Some seven thousand primary school children sat for a preliminary examination with a view to competing for free places in secondary schools. These children were drawn from just over two hundred schools. Each head teacher marked the papers of the candidates who were pupils in his own school. In order to limit the variability of marking standard among head teachers, the arithmetic paper was marked according to the following scheme. For a correct answer obtained as the result of a reasonably good method of working, 10 marks. Where the correct result was obtained from a very bad method, 7 marks. For each mechanical slip the candidate was penalised 2 marks. Thus a very good method with two mechanical slips would gain 6 marks. A bad method with one mechanical slip would gain 5 marks. A result involving greater inaccuracies or very absurd answers was awarded no marks at all. The possible positive marks therefore ranged between 5 and 10 for each of the fourteen questions. After the papers had been marked by the teachers, they were arranged in order of merit and the top, bottom, median, and two quartile papers were withdrawn and sent to the external examiner, making a sample of five papers from each school, which number was reduced in the case of very small schools to three or less according to the number of candidates.

The marks from two of the schools are given below.

School.	Teacher's Mark.	Examiner's Mark.	Difference.
8	109	108	-1
	51	44	-7
	48	49	+1
	23	30	+7
	0	0	0

School Correction 0. Mean difference 3.2.

School.	Teacher's Mark.	Examiner's Mark.	Difference.
47	123	121	-2
	116	104	-12
	73	70	-3
	51	44	-7
	32	20	-12

School Correction -7. Mean difference 7.2.

Marks on the median papers from the different schools.

Frequency....	2	3	14	45	43	45	30	16	2	1
Marks	0/14	15/24	25/34	35/44	45/54	55/64	65/74	75/84	85/94	95/104

Each group of papers (from a single school) was taken by itself and the differences between the examiners' mark and that of the schoolmaster were added (algebraically) and the average difference obtained was applied as a correction to the papers from that school. By this method, a crude method possibly, the varying standards of marking were equated.

Distribution of 209 corrections applied.

2	2	10	14	13	33	64	32	25	8	2	4
17/16 11/10	9/8	7/6	5/4	3/2	1/0	1/2	3/4	5/6	7/8	9/10	
(Minus)											(Plus)

209 cases distributed "normally" in eleven equal grades.

2	6	14	25	36	43	36	25	14	6	2
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The distribution of the corrections approximates to a normal frequency which suggests that the teacher, when measured by the examiner as the standard, is variable in much the same way as other mortals. A more detailed statement of the two markings is given in the table below. This table shows that the variability of marking was nearly constant throughout the range of marks awarded.

Examiner's Marks.	Teacher's Marks.													M.V.	
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	
130+													3	9	4
120+												5*	15	12	5
110+											4	20	5		3
100+										3	17	15	3		7
90+									1	4	24	8			4
80+								16	32	7	1	1			5
70+						2	9	32	16	4					6
60+					3	18	47	20	5						6
50+				2	11	57	28	4							5
40+		2	9	54	36	2									5
30+	1	14	50	38*	1										6
20+	8	32	25	2											6
10+	12	28	14	0	2										6
0+	83	5	1												1

The above table reads as follows : 38 candidates were given between 40 and 50 marks by the teacher, but were only awarded between 30 and 40 by the examiner ; 5 candidates were given between 110 and 120 marks by the teacher, but had their marks raised to within the limits of 120 to 130 by the examiner.

One hundred and thirty-five of the schools referred to above had samples of their English examination papers marked by one examiner. The papers were marked in accordance with a rigid and very detailed scheme. The corrections given to the teachers' marking are distributed with almost normal frequency, as is shown in the table below. Thus it is seen that the same teachers when compared with another examiner show similar variability of standard among themselves.

Frequency	....	1	7	30	59	34	4	0
Marks correction	-16/-13	-12/-9	-8/-5	-4/-1	0/3	4/7	8/	

Again the variability between the marks of the various teachers is nearly uniform throughout the range of marks awarded and the extent of this variability is about the same as it was for the arithmetic paper.

Teachers' Marks.	Examiner's Marks.													M.V.	
	0+	10+	20+	30	40	50	60	70	80	90	100	110	120	130	
130+												1		1	10
120+												2	4	2	5
110+										1	9	1			2
100+								2	11	11	1				6
90+							2	14	13	1					6
80+						4	10	6	3						6
70+					1	2	19	20	1						6
60+					3	22	33	5							6
50+				1	17	46	7								4
40+			1	15	42	6									4
30+		22	39	5											5
20+		17	35	8											6
10+	11	32	6												3
0+	39	7	1												2

The similarity between the results of the two examinations can be stated briefly as follows :—

P.E. of corrections given.	Arithmetic paper	3.2 marks.
	English paper	2.6 marks.
P.E. of difference of marks on individual papers :	Arithmetic	4.0 marks.
	English	4.0 marks.

The above results can be expressed in another way by saying that the average difference between the examiner's mark and the schoolmaster's mark was equivalent to 5 marks per paper. A difference of about 3 marks per paper is attributable to difference of standard between the examiner and the schoolmaster. That leaves an average of 2 marks per paper to cover the variability of the examiner with a fallibility "more than human," and the variability of "the schoolmaster with his likes and dislikes," together with any other fluctuating influences. On the whole the fallible examiner and the dishonest schoolmaster make a tolerably accurate ledger account between them, the auditing of which does not disclose many serious discrepancies.

The data considered above furnish two facts of importance, first, that the variability is constant throughout the range of marks ; second, that the average total variability is 5 marks per paper or about 3 marks on a hundred scale. The conclusions are possibly only valid for examinations conducted under the special arrangements described. These examinations had as their object the selection of scholars for secondary schools. Now the variability of 3 marks per cent. will undoubtedly diminish the accuracy of this method of selection, and it is of some importance to know what effect it will have on the grading of the pupils in the secondary schools to which they are drafted. This question will be considered in the second part of this article, but before doing so there is another aspect of the marker's variability which deserves consideration. Is the difference of standard in the marking of one subject paper of the same order as the difference of standard in marking the papers in another subject ? For example, is there a tendency for schoolmasters who over-mark in arithmetic to over-mark in English as well ? The correlation between the corrections applied to the English and arithmetic papers (122 cases) was .28 p.c. .06. In other words, the bias would be increased if the results of the two papers were combined. The examiner thus serves a useful function in preventing the accumulation of bias where the examination consists of several papers.

In contrast to this, the variability of the individual examinee tends to be eliminated by the combining of different papers. In the two previous years the candidates from the same schools sat for a preliminary and final examination under similar conditions. Fewer candidates sat for the examination so that the sampling was unnecessary. The papers were not marked by the teachers, but only by external examiners. The correlations between the two examinations are given below.

In 1920 (over 400 girls).		
Preliminary English paper and final English paper	....	.48
Preliminary arithmetic paper and final arithmetic paper	....	.63
Combined preliminary papers and combined final papers	....	.69
In 1921 (over 450 boys).		
Preliminary English paper and final English paper	....	.45
Preliminary arithmetic paper and final arithmetic paper	....	.48
Combined preliminary papers and combined final papers	....	.51

It must be admitted that the differences are hardly significant in the 1921 results, but they are in the same direction as those of 1920.

THE EFFECT OF VARIABILITY ON THE ACCURACY OF SELECTION.

Given that the variability is equivalent to a P.E. of 3 marks (on a hundred scale), and that this variability is constant throughout the range of marks, what effect will it have on the accuracy of selection? If it be desired to select the 5 per cent. most able candidates, how many of these will fail to be selected owing to the variability of those who mark the papers?

Suppose that there are one hundred candidates whose marks are extended over a percentage scale of real ability, then the upper end of the curve of distribution will be approximately represented by the following numbers:—

Frequency	3	3	2	1	1	1	1	1
Grade of ability	78-80	81-83	84-86	87-89	90-92	93-95	96-98	99-100
Moorhens	Ducks	Geese	Black	Grey	Swans	White	Super	Ideal

One of the letter writers, referred to above, claims that many geese are swans in the eyes of their own teachers. For the purpose of exposition, it will be convenient to further subdivide the candidates into numerous classes of swans and "other" birds—geese, ducks, moorhens, and grades of wild fowl. If these names are given to the different groups of examinees according to their real ability, it will be more easy to imagine the character of the selection which results when there is a probable error of marking of, say, 3 marks. In order to separate his 5 per cent. of swans, the examiner (teacher or administrative official) will have to put the dividing line between 86 and 87 marks. Owing to the variability of marking some of the "other" birds will gain marks sufficient to carry them into the successful 5 per cent. of selected candidates, and some of the really able candidates will fail to cross the dividing line. The chances of an ideal swan being selected are over 1,000 to 1, those of a super swan are 100 to 1, those of a white swan 20 to 1, those of a Grey swan 6 to 1, and those of a black swan 2 to 1. The chances of the undeserving birds are, geese 1 to 2, ducks 1 to 6, moorhens 1 to 20. Since the "other" birds are more numerous than the swans the final 5 per cent. chosen will contain fewer swans than their individual chances suggest. The 2 per cent. of geese would, if accurately selected, all gain between 84 and 86 marks, but owing to an inaccuracy of marking equivalent to a P.E. 3 marks these birds will be found in several groups, proportionally as follows:—

.02	.08	.24	.40	.52	.40	.24	.08	.02
74-72	75-77	78-80	81-83	84-86	87-89	90-92	93-95	96-98

The two tables below give the distribution of swans and other birds assuming a P.E. of the same magnitude. The proportion of swans and other birds selected will be according to their distribution above the dividing line.

SELECTION BY EXAMINATION.

	Swans.								
	76-77	78-80	81-83	84-86	87-89	90-92	93-95	96-98	99-100
1 Black	.01	.04	.12	.20	.26	.20	.12	.04	.01
1 Grey		.01	.04	.12	.20	.26	.20	.12	.05
1 White			.01	.04	.12	1.20	.26	.20	.17
1 Super				.01	.04	.12	.20	.26	.37
1 Ideal					.01	.04	.12	.20	.63
Total Swans (4.42)					.63	.82	.92	.82	1.23
	Other Birds.								
3 Wildfowl	.78	.60	.36	.12	.03				
3 Moorhens	.60	.78	.60	.36	.12	.03			
3 Ducks	.36	.60	.78	.60	.36	.12	.03		
2 Geese	.08	.24	.40	.52	.40	.24	.08	.02	
Total other Birds (1.43)					.91	.39	.11	.02	.00

Above the dividing line the proportion of swans to other birds is 4.42 to 1.43, thus the attempt to chose 5 swans will result in obtaining 3.8 swans and 1.2 other birds. If the unit of measurement is always taken to be the P.E., then P.E. of 6 gives 2.7 swans and 2.3 other birds as the result of selection ; P.E. of 9 gives 2.2 swans and 2.8 others ; P.E. of 12 gives 0.9 swans and 4.1 other birds. The proportion of the various types of birds are expressed as percentages in the table below.

P.E.	Swans.	Ducks and Geese.	Wild Fowl.
0	100	0	0
3	76	21	3
6	54	26	20
9	44	24	32
12	18	14	68

According to Starch the teacher or examiner if allowed absolute freedom of marking standard, will only agree with other teachers or examiners on a scale with five divisions, *i.e.*, the probable error expressed in percentage marks is 20.0. In the language of the analogy in such a case, over 70 per cent. of the teacher's swans would really be wild fowl. If the difference of standards is eliminated then, according to Starch, fifteen different grades can be differentiated in a reliable manner, *i.e.*, the P.E. is 6.6. marks on the percentage scale. "Hence the marking scale for an individual teacher, who grades papers from his own view point and compares them only with his own judgments, could have each step in a five point scale subdivided into three smaller steps. . . ."* This means that only about 50 per cent. of the teachers' swans of to-day will be recognised as swans by the same teacher at a subsequent date, if his judgment is based on the same set of examination answers. Starch suggests that "Variability . . . may be reduced by adopting . . . a plan of giving weights or penalties for certain types of errors or defects." In the examination, from which the data here considered were obtained, the rigid marking scheme employed, in effect, carries out Starch's suggestion. The result is that the variability among the teachers is reduced to

* "Educational Psychology," p. 440.

less than a half of that to be expected of the individual teacher working to his own standard. Apart from the variability of the candidate himself, the examiner, and the calibre of the examination paper, a steady fall in the variability follows from the introduction of the various safeguards.

Variability of teachers working without agreed standards	....	20.0
Variability of a teacher working to own standard	....	6.6
Variability of teachers working to fixed marking scheme	....	3.0
Variability reduced by fixed scheme and external examiner to....	Zero.	

If it be assumed that the variability of the examinee is equivalent to 3 marks (probably very much underestimated), that the variability introduced by the character of the examination questions be equivalent to another 3 marks and that a further 3 marks represent the variability due to the marking of the teacher, then we have an examination selecting only 44 per cent. swans instead of 100 per cent. If it be allowed that the introduction of a rigid scheme of marking and the checking of an external examiner reduces the variability by 3 marks, then the effect is to raise the number of swans chosen to 54 per cent.

It has been suggested by Burt* that at least 10 per cent. of the school children of each age group are capable of profiting from an advanced course of instruction. On that basis we ought to include the ducks and geese with the swans as being suitable for secondary education. A variability equivalent to a P.E. 6 marks will enable 80 per cent. of the swans, geese and ducks to be chosen and allow 20 per cent. of wild fowl (moorhens and other orders) to enter a school for which they are not intellectually fitted.

The effect of variability on the success in choosing desirable scholars by means of examinations can be shown in terms of the mental calibre of the classes in the secondary school. Let us assume a selection error of 6 marks, and consider its effect on two schools, one of which takes in 100 scholars each year and the other 170 scholars. If the classes could be properly graded they would present a composition somewhat like that suggested below.

Average School.

Form Ia. 34 swans.
Form Ib. 20 swans, 11 geese, 3 ducks.
Form Ic. 12 ducks, 20 wildfowl.

Large School.

Form Ia. 34 swans.
Form Ib. 34 swans.
Form Ic. 24 swans, 10 geese.
Form Id. 8 geese, 26 ducks.
Form Ie. 34 wild fowl.

It is highly improbable that any steps can be taken to make examinations more reliable than a P.E. of 6 marks implies. The alternatives to the examination as the basis of selection are (1) the school record, which is based on the teachers' marks and is likely to be more unreliable; (2) the intelligence test, which is more reliable but which does not, or at least is not intended to, measure the knowledge already gained by the pupil as the result of schooling; (3) transfer on probation.

If it be known that a particular mode of selection has a definite margin of error, then the elimination of the unfit after a probationary

* "Educational Abilities," p. 44.

period is surely the best way to avoid waste of effort on the part of both teacher and pupil. If owing to faulty selection, twenty per cent. of "unfits" enter the school each year, then automatically the bottom twenty per cent. at the end of the first year should be put on a special course. This method would be much less wasteful of effort than the present method, or rather absence of method, which allows possibly twenty per cent. of the secondary school population to be dragged through a course for which they are not suited. It is only right to state, however, that in the opinion of the writer, the 10 per cent. suggested by Burt as suitable for advanced instruction is too small a fraction of the population, and that an examination unreliability of six marks is much too optimistic an assumption. These standards have been adopted purely for the sake of exposition.

If in England we are committed to selection as a general policy on the ground that secondary education for all is wasteful of time, money, and effort : then, on that same ground, there are good reasons for claiming that the method of selection should be enquired into, its unreliability measured, and a method of eliminating the resulting waste courageously applied.

School Practice in the Future.

BY H. WYATT.

THE time has come to discuss a change coming over education which may affect the character of the practice undertaken by students in training, and provide some reasons for shifting the pivot of the training from the college to the school. This is the change from the class to the individual as the unit of the teaching. The grouping of children for instruction is clearly an expedient of economy. It is, however, open to obvious drawbacks and defects ; which follow inevitably in the hands of unintelligent teachers, and from a type of examination that demanded—as the public elementary school examinations of the last century did—a uniform minimum level of mechanical attainment in all pupils of a class. With these conditions ameliorated or removed, within the present century there has been a growing repudiation of the ideals of class teaching, and an endeavour, while keeping for convenience the class formation, to develop the individual—each child following his own aptitudes at the pace and in the way that suit him best.

Couple with this a broadening conception of the duty of the teacher, concerned no longer merely with informing the mind, but also with helping the child to form the man in his entirety, and the foundation for a revolution in the practice of teaching in training colleges is laid.

The oral lesson delivered to the class assembled takes a subordinate place; an expedient used on occasions to supplement the real business of the teacher, which now becomes that of giving to each individual in a group the best direction that will enable him to progress alone, and in association with his fellows. The prospective teacher is faced with the difficulty of acquiring a peculiarly delicate new art : the art of knowing each individual amongst many, of keeping all alive and active, of seeing what each is doing while superintending all. The teacher becomes a director of activities, not merely a communicator of knowledge.

So far this view of the teacher's function is exemplified most frequently in practice in the earliest stage of school education—the Kindergarten and the Nursery School, and the influence of this conception upon the training and the school practice of the future teacher has been already suggested in the chapter on Training for Nursery Schools, where it was pointed out that the practice was different in kind from and required a bigger place in the time-table than that customary in training for more advanced stages of schooling.

But both school and training college teachers are beginning to apply the same fundamental principles to the education of older children. The idea of individual adaptation is already influencing school and college work generally, but as yet only in a few schools has the actual organisation of the school been altered to suit the new ideals, and the alterations in the preparation of teachers for a new conception of school life have yet to be worked out and carried through. This is no doubt inevitable, because new school organisations (as at the Streatham Hill Secondary School for Girls) are still in the experimental stage, and schools for practice of the type required are not available ; it has been hard enough to find them even for nursery school training students.

With a movement still in its inception, it may yet be useful to mention here important characteristics of a school which embodies the new spirit, and of a type of training which is endeavouring to correspond.

In a school experimenting along these lines for instance, the pupils might be found grouped simply by ages, but not attached to particular classrooms. They would be working for much of the day in a large central hall, not in complete silence, but it is to be presumed amid the hum of industry rather than the noise of disorder. For they are carrying out their assignments, or monthly attainment standards allotted to each child according not to a general level common to the class but to an estimate of what without slackness or over-pressure the child in question can fairly undertake. It is usually found convenient to divide the monthly assignment into lesser—say weekly—units, so that the child may check his progress as he goes along. This assignment is the child's job, and he is at liberty to do it in his own time and within limits at his own pace, concentrating continuously on one subject till he completes a unit, or dispersing his attention amongst several, nor is any sharp line drawn between home and school occupation, except that at school there are opportunities for help from teachers not available at home. The teachers, as distinct from those in nursery schools, are, for middle and upper school pupils, teachers or directors of subjects, and a good deal of their time they spend in their subject-rooms, ready to give assistance where required. The text and reference books relating to a single subject are kept in that subject-room. There is thus a degree of individual teaching especially for children unable to progress alone and thus seeking the teacher's aid ; but the adapting of its assignment to each child reduces this need proportionately. Though the teacher is less often present before the assembled class than formerly, she gets to know each pupil from individual contact, and it is her duty to study the character and needs of each. There will also be occasional, perhaps periodical, class lessons, for the summarising of results or the solving of common difficulties, one question at issue in the experiment being the degree to which class teaching should be dispensed with. Conclusions on this point are still awaited.

There is room in the system for adaptation of curricula to the individual—the teacher's task now being, not to take a recognised curriculum and apply it to all, but so to study each pupil as to find out what really is best suited to make that child of the most service in life to himself and others. It is not to be supposed that this purpose is as yet easily or successfully carried out. That it is recognised and attempted signifies however the corresponding need of special psychological insight or preparation on the part of the teacher, and the inclusion of methods of individual pupil study in the teacher's training.

There is room also for work in association, for pupils doing work in common are able to help one another, in pairs or larger groups, the children grouping in this case according to interest and not arbitrarily at a teacher's command. There is also a proportion of more formal group teaching, and meetings for games, dancing, children's committees, and social occupations.

This type of school organisation, though modifications may be required to make it generally practicable, may be reasonably claimed to allow for individual needs and aptitude ; to forestall the waste of time

of regular class teaching where the teacher is doing the bulk of the active work, where the bright pupil idles while the dull pupil catches up, pace and subject matter are uniform, and school time for each subject is proportioned to a mean not to the comparative abilities of each pupil ; and, if skilfully directed, to throw pupils on their own responsibility by increasing independent study to its convenient maximum, encouraging the children to be their own judges of the help that they require.

An interesting instance of an attempt to adapt the training of teachers —at least as regards their practice—to this conception of individual pupil treatment is to be found in the High School attached to the University of Wisconsin at Madison in the state of Wisconsin, U.S.A., the practising school for students taking a degree or four-year course for secondary teachership and usually taking their school practice in their last year, so that they correspond roughly, in academic preparation, to students taking a post-graduate course in training for a University teaching diploma or degree in England or India.

It is clear at the outset that the necessary skill is not to be attained by the customary method of concentrating the student on lesson-giving to an assembled class with correction, supervision and testing as subsidiary. Cut and dried procedure (the criticism or practice lesson timetable, with series of oral lessons to the name of each student) disappears. The problem is one rather of working the student gradually in to the position of co-operator in chief with each individual in a group in the continuous progress of them all.

According to the organisation of this school the pupils continue in classes arranged roughly on the basis of ability and attainment, but work in subject rooms by timetable under subject teachers. But the work shares with that in the type of school above described the staple feature of individual activity in place of class teaching. Directed study replaces hearing the lesson. “The teacher or director of activities is engaged in conferring with pupils, giving suggestions, assisting in organising procedure, acting as consulting expert.” Meantime every pupil is himself at work—there is no mere “paying attention” to the teacher teaching.

The plan adopted to initiate the prospective teacher into her duties is that of first making her one of the class. If this were done with the ordinary type of oral class teaching, the result would be that she would figure merely as, presumably, a better pupil than the rest. But under this system of co-operative directed activity, she is called upon not only for a knowledge of the subject, but for active participation in the work of the pupils. “Working for a time with the pupils, as one of them, accepting in reality the challenge to compete with them in matters of fact, information and judgment is a procedure by which an intimate knowledge of the pupils is gained.” The college student may be “called upon to present a topic, develop a proposition, give a summary, organise a body of facts with reference to some purpose, write a story as the pupils do, enter into a discussion, take up the work at any point with a problem outlook or question, give suggestions as to procedure, volunteer in contributing to a recitation, bring in new material, go to the board or map to present some concrete illustration, translate a passage, manipulate apparatus—in short, to be ready at any moment to go forward with any kind of work as the best pupil in the class might do.”

What the pupil is learning is in fact how to teach himself, with or without the aid of others, and therefore by becoming such a pupil the student in training is studying the methods of teaching, and that at first from the pupil's point of view.

The picture which the classroom presents is often that of some thirty pupils working at desks or blackboard* as units or pairs or small groups, each engaged in a piece of work round a central 'core' or main subject. In history it might be, say, the part played by separate leaders in some stage of the American Civil War, or in mathematics the working out of areas under different conditions. A mean is preserved between uniformity in topic which levels all, and too wide a dissimilarity to admit of contributions being made by individual pupils or college students. The teacher in general charge keeps in touch with every pupil or pupil group, and may occasionally put in a quiet word or suggestion here, or give an answer to some pupil who comes up to her for help or comment. Meantime the student in training is for the time being at work with the pupils, or as she becomes master of the subject matter will be able to watch proceedings like the teacher. But at any moment the proceedings may be suspended, a discussion on some point of general interest may arise, and the student in training must be prepared, like any other pupil, to join competently and usefully in the discussion, to put or answer pertinent questions, or to make such contribution as the occasion demands.

And in this she has to take her stand on her merits ; to meet criticism or correction no less than to offer it. Thus in a literature lesson, which I witnessed, in which several pupils had been studying the poem "Paul Revere's Ride" with a view to repeating it aloud, one pupil attempted to recite with proper expression. The teacher afterwards called upon the student for a better rendering, the pupils discussed her rendering, suggesting for instance a change of emphasis on certain words. She then gave an amended rendering, rightly considered better by the class.

In theory this process of training for executive teachership by participation should be deemed complete as and when the student can undertake the multifarious duties of the teacher in the rôle of director—keeping all pupils busy at work which exercises each but strains no one, knowing just when and how to interrupt proceedings to advantage, what help to yield here or self-help to insist in there, when and to what extent to test individual and general progress, how far to admit isolated and group study, how to combine a central 'core' of study with scope for individual development.

To effect these purposes with success, there is need of :

(1) A mastery of the subject, not merely of a given piece of subject matter ; for the teacher must be able to meet any emergency or situation that independent discussion may suggest. There is no reliance here on a ready-made lesson with responses anticipated in advance.

(2) A ready familiarity with numerous devices for handling every situation as it may arise. There is no one method of any subject which can be learnt and applied directly to the teaching of it.

* In American schools blackboard runs usually round all or three-quarters of the classroom wall—a plan convenient for individual or group work of this kind.

(3) An eye and ear for all that is going on around her, the habit of keeping in touch with each pupil, and detecting just how to help that pupil most by giving least.

As the student makes progress in these three directions, it becomes possible to give her increasing responsibilities, so that without the aid of formal demonstration lessons, or the delivery of a given series of criticism or practice lessons on her part, she can grow as it were by graduated experience into a teacher. This is the idea underlying this new type of training for a new type of teaching.

To assist in this process each student maintains a diary containing a personal account and judgment of the day's work. For this a stereotyped form of entry is avoided : the report is to arise from the student's own thought about her difficulties and progress ; and as each day's diary comes up for constructive comment and suggestion, after discussion, from the supervising school teacher, and is then added to the student's permanent file, the keen student has here a means and a record of her development as a practical teacher.

The diary form has a short printed heading reminding the student to avoid ready-made methods, to regard teaching as "directing activity." "You are an active participating member of a working group, responsible every day for all situations in the class period. Avoid falling into formalities. Rise above the obvious in reporting. Mere observing is not productive. This report is a practical account of your work and your thinking, both in and out of class."

Two brief samples of these entries must suffice :—

MISS A.

Geometry—10th Grade—30 pupils.

"A great deal of the interest and benefit to be gotten out of geometry is lost when the class does not depart from the text-book. If I had not seen these new ideas worked out in class, I would have thought of teaching geometry much as it was taught to me—assignment in the text one day and reciting this assignment the following day. Exercises unlike those found in the text in use, a chart which shows who is capable of doing the most exercises in a certain length of time, incomplete proofs, progress according to ability, and forming theorems with the figure for the proposition as an only suggestion are all new ideas to me, and these ideas can be put into effect in any classroom."

MR. K.

History—9th Grade—23 pupils.

"In my part in the class discussion I feel that I am right at home, but after I finish an attempt to conduct or guide the discussion, I am entirely dissatisfied with my work. I find it very hard to listen to the discussion, think of the material, frame or find a question if necessary and to keep the discussion moving without doing most of the talking. It seems to me that when I eliminate one fault another comes up ; for instance, this lack of ability to keep things in order came out to-day when I called Richard by Stanley's name. It is not a grave error, I know, but I feel that there is not the proper co-ordination between all these things so that I can put all my energy into the work."

The important thing is to obtain from the student promising comment on his work, experience, and practice, not just an account of what some one said or did.

Though the particular method of practical teacher training just described neither can nor should be adopted in its entirety in different circumstances, it may not be too venturesome to suggest some principles which condition the successful preparation of a teacher for the transformation that is taking place in school organisation and teaching :—

(1) The staple of the training must be participation in the school and pupil activities, and by gradually assuming higher responsibilities ; not by the delivery of lessons to a class.

(2) The student must acquire a complete knowledge of her subject (not of particular lessons) the habit of hearing her pupils and observing all pupil activities, and a variety of expedients adaptable to each particular case. Procedure must not be ready-made.

(3) Supervision of the student should be by a school teacher, often present and in charge of operations, not by an outside tutor visiting occasionally. This contrasts with the supervision by college lecturers common in English training colleges.

(4) The school staff must be very highly qualified, and able both to conduct teaching themselves in the spirit of the new teaching, and to combine with this the guidance and assistance of the student.

(5) Much more time should be given to the practical side of the teacher's training than is usual in training college courses, and the training should pivot round this practice in the school.

In point of fact the practice period of the students in the case I have described lasts usually only ten weeks, but this is recognised to be far too little for the object in view. But the duration of the practice should vary with the progress of the individual student.

(6) This method of practical training needs for its success not only an excellent staff, but unusually intelligent and well-educated students ; for it demands at every turn the ability to dispense with particular methods and to detect at the moment the particular application of educational principles that suit each situation or each individual.

The question is whether the instrument required is not too fine for ordinary craftsmen.

(7) The whole of the student's training—both the theoretical and the practical work—should be under the same authority and imbued with the same spirit. The common plan by which the college is one institution and the practising school another, threatens failure.

A question of more immediate moment than that of the adaptation of training for a future type of teaching is that of the applicability of methods of training so adapted to the facts of the present situation. The practising school in which, in the case just discussed, the student works out her teaching salvation is really a school for demonstration, in that it is intended to exemplify not the current practice and conditions, but something better. One of the objections to the use of a demonstration school for practice, namely that the practice in it of immature students would spoil its efficiency for demonstration, has however in this case been removed, because the student assumes responsibilities so gradually as not to disorder the pupils' progress at any point. But the drawback to

the use of a demonstration school for the main practice still remains, that the student is thereby being prepared for teaching in a set of conditions which she will not encounter at the opening of her career, and the obstinate question again arises of reconciling ideals with practice. Where, as in this case, the conditions in the school depart considerably from the ordinary, it might easily happen that a student prepared to teach her pupils by leadership and participation may meet with disillusionment and defeat when suddenly confronted in an ordinary school with an ordinary class, which expects her to teach them lessons, and have not been interested as a class or individually in doing hard work themselves.

The new teacher is no doubt to be the pioneer of better things, but her preparation would be more complete if, during its course, she had with ideals before her found practicable in a pre-arranged environment to practise an approach to them in an ordinary school environment. For it is precisely in this that her work will consist—the introduction of ideals, perfectly workable in themselves (that is, given ordinary child nature and possible school conditions), into schools where their introduction is resisted.

These considerations can also throw light on a second question, whether after all the best method of teacher preparation is not one which centres that training on a school, prolongs beyond the usual limit supervised practice, and directs its supervision from the school authorities and not from an outside college.

The answer which this discussion suggests is that in principle the plan is commendable granted certain conditions, namely the existence of an excellent school with an excellent staff, arrangements for the instruction of the student in the theory as well as the practice of her profession, for her mastery of her school subjects, and for contact with other schools of ordinary standard in the neighbourhood. One difficulty is that of finding enough excellent schools willing or able to undertake the duty ; and there is also the objection that the interests of attached classes are apt to be subordinated to those of the school, and of lack of equal and varied companionship for the few students that any single school could entertain. Then there is also the cost of providing special instruction, in theory and academic subjects, to small groups of students in separate schools.

The present separate training colleges, with large numbers in attendance, seem likely to continue until the difficulties of the alternative scheme of attaching students to schools for training are removed ; an alternative in any case more likely to be successful with advanced students who require less help in mastering their subjects and in profiting from their experience of training than with the young students usual in English training colleges. It will be noted that the Board of Education confines its recognition of a training conducted in a school to graduate students for secondary teacherships ; and the history of teacher training in England has shown that the plan of attaching young students to elementary schools as pupil-teachers proved generally unsatisfactory in the past, mainly because the head teachers were experienced rather than progressive, the students too immature to profit from their practice, and educated too narrowly to think beyond their class-room walls. On the other hand, though for its perfection the new type of practice and teaching requires a highly educated student and a change in the focus of the training, this

does not mean that the ordinary training college student's practice may not well be modified in the new directions, as for instance, by learning how to conduct class work with more attention to individual and group, and endeavouring more to inspire and direct the pupils to activity and less to convey so much information in so much time. As a lecturer in a well-known training college has recently said : "Students were sometimes surprised to hear that class teaching, to which alone they had been accustomed, was not the only form, but that group and individual teaching were equally important," and if, as at present, students in training colleges have not themselves acquired the habit of independent study, while that itself may retard a change in the character of the training, it is also a reason for altering the character of the schools which supply these students.

The Suggestive Force of Different Question Forms in School Work.

BY VERNON BROWN.

- (1) Foreword.
- (2) The Experiments.
- (3) Grouped Statistics of Right (R), Wrong (W) and Doubtful (X) answers.
- (4) Discussion of the results.
- (5) The Suggestibility of Individual Scholars.

(1) FOREWORD.

THE object of this work was to investigate the influence on children in an elementary school of the form of questions which have definite bearing on school work. The results are also of interest in considering the forms of questions used in standardised examinations and texts.

In his book, "La Suggestibilité," Alfred Binet describes experiments which he made to discover to what extent people in a normal state are influenced by suggestion. Part of his book, entitled "L'Interrogatoire," shows that the suggestive force of a question depends upon the form into which it is put.

He considers all questioning to be a forcing of memory. His questions were divided into three groups. Those of the first group were not suggestive, but acted like all questions as stimulation to the memory. Those of the second group were moderately suggestive, and of the third strongly suggestive. For instance :

Group I. "How is the button fixed to the cardboard ? "

Group II. "Is not the button fixed to the cardboard with thread ? "

Group III. "There are four holes. What colour is the thread which passes through the holes to fix the button to the cardboard ? "

The button was glued to the cardboard, and no thread was present.

This work was followed by experiments of Otto Lipmann,¹ who attributed the force of suggestion in questions to :

- i. The question form (hereafter known as Q.F.).
- ii. The authority of the questioner.
- iii. The suggestibility of the questioned.
- iv. The question content.

He classified questions according to their form as follows :

1. Determinate Q.F. e.g. "What colour is the apron ? " (This question form contains a question word.)
2. Complete disjunction Q.F. e.g. "Is the child in the cradle asleep, or is it awake ? " (It must either be one or the other.)
3. "Yes—No" Q.F. e.g. "Is there a cupboard in the room ? "

¹ Die Wirkung von Suggestivfragen.

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4. "No" Q.F.	<i>e.g.</i> "Might the man possibly have had a spoon in his hand?" (Lipmann states that the suggestion here is weak, for the answer "No" seldom comes. This seems as it should be. The reasoning of the person answering would be, "Possibly he had a spoon in his hand, I cannot swear that he had not." So the answer is "Yes." The influence of such a question and answer might be great with a jury in a court of law; the implication achieved through the question being that the man actually had the spoon in his hand).
5. "Yes" Q.F.	<i>e.g.</i> "Is not there a cupboard in the room?" (Where the answer "Yes" follows more easily than the answer "No").
6. Incomplete disjunction Q.F.	<i>e.g.</i> "Is the apron red or green?" (Where it may be neither).
7. Implicative Q.F.	<i>e.g.</i> "Is the door of the cupboard open or shut?" (There may not be a cupboard, in which case the implication is false, or there may be a cupboard, and the implication is true).

Lipmann admits that there is a certain amount of overlapping. For instance, kinship is recognisable between 5 and 7 Q.F.'s. This should be borne in mind when the grouping of questions is considered.

(2) THE EXPERIMENTS.

In the process of the work preliminary to that described in detail below questions were put to the scholars concerning the subject matter of set lessons. The results showed that scholars find difficulty in throwing off the influence of the implications involved in questions, and that a false implication is very readily accepted where their knowledge is uncertain. It was then decided to make the work still more nearly akin to actual school work, and to give a wider range for questions, by taking a course of lessons on the geography of North America. The main research was carried out in a colliery school, with boys of the Sixth Standard. A few scholars had recently been promoted from Standard V, and a few were permitted to call themselves Standard VII. The average age was 12 years 6 months. They were all taught by the same teacher in ordinary school lessons, and had not previously studied the geography of North America.

There was no difficulty in keeping on good terms with the boys, as they were used to working, independently and in co-operation, under an admirable system of school order. I always obtained willing work and ready response. The advantage of thus becoming well known to the boys before testing time is, I think, great.

The subject matter of the geography taught was straightforward. Great detail was avoided, and considerable trouble was taken to introduce vigorous illustration into the work. The facts had reference to North America, position, size, shape, political divisions, physical features, climate, natural regions, vegetable and mineral products, fauna, occupations of the people, centres of industry, and communications (especially

water ways). Practical work by the class included the preparation of maps showing physical features, rainfall, temperature, vegetable products, minerals, and industrial centres. Maps were used freely, and all places mentioned were located at once on the map. Each question referred to geographical information which had been definitely and emphatically taught during the lessons.

The following four questions, and the teaching upon which they depend, illustrate this point :

“ What are the names of the systems of mountains in North America ? ”

The class had constructed relief models of the country with gummed coloured paper, one model for two boys. As each layer of paper was fixed, it was discussed, and its meaning explained. Three colours were used : green represented land from 600 feet to 1,000 feet ; yellow, from 1,000 feet to 3,000 feet ; and red, over 3,000 feet. The “ systems ” Atlantic and Pacific were taught as such, when they became evident after fixing the yellow paper.

“ Where is the Great Basin ? ”

A whole lesson of a descriptive type was spent on this, after considering the rainfall of the continent. Its position was shown, and was defined in terms of the mountain ranges East and West of it.

“ What has happened to the great herds of bison which once lived in U.S.A. ? ”

Extracts from travellers’ accounts of these herds, as they used to be, were read. The contrast between the great herds as they were and the present small numbers, needing Government protection, was emphasized.

“ What parts of the North American coasts are famous for fisheries ? ”

Part of the story of “ Captains Courageous ” was told, describing the hardships and dangers of the lives of fishermen. This was associated with the teaching of the fishing areas.

Division of the Class.

When the course of lessons was finished the scholars were given a ten minutes’ mental test, for the purpose of dividing the class into two halves of about equal intelligence. An approximate intelligence quotient was calculated for each boy, though the error in a short test must be considerable. Class A varied from 71 to 141, with an average I.Q. of 97. Class B varied from 73 to 138, with an average of 98.5.

The intelligence of the scholars was tested more thoroughly later, by means of a special hour test. The correlation between the two tests was 0.7.

Two questionnaires, each containing forty questions, were prepared. Questionnaire A consisted of questions of the Determinate Q.F. In Questionnaire B the same questions were put in an altered form so that they were apparently more suggestive than the questions in Questionnaire A.

The scholars, divided into the two classes according to their rank in the results of the mental test, were assembled in separate rooms, and the instructions concerning the new test were given. The rooms were situated so that I could stand in the doorway between the rooms and

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address both sets of boys at once. Each scholar had a desk to himself and was given forty separate slips of paper, which he numbered 1 to 40. The regular class teacher read out Questionnaire A to one set of boys while I read out Questionnaire B to the other set. The door was of course shut, but through the glass partition I was able to signal the time for each question. The headmaster was in my room, in a position which enabled him to see both sets of boys, so that, even had a boy been inclined to copy his neighbour's answer, it was quite impossible for him to do so unobserved. As a question was answered the slip was placed, writing downwards, on another part of the desk. This was a necessary precaution. Had the questions been answered on a sheet of paper a later question would have enabled a boy to answer an earlier one.

The scholars were not permitted to ask questions.

When all the questions had been asked, each boy pinned together his answers, checked the order of the numbers on the slips, and saw that his name was written on the first slip. The bundles of slips were then collected, tied according to the class grouping, and marked.

**(3) STATISTICS OF RESULTS, SHOWING THE NUMBER OF RIGHT (R),
WRONG (W) AND "I DO NOT KNOW" (X) ANSWERS FOR EACH
GROUP OF QUESTIONS.**

Group A Questionnaires. (5 pairs of questions.)

Comparison of Determinate Question Forms (A) with Determinate Question Forms plus a number (B).

e.g.

- A. "What are the chief crops of the United States?"
- B. "What are the three chief crops of the United States?"

	R	W	X	N	$\frac{W}{R+W}$	$\frac{X}{N}$
Questionnaire B	56	49	40	145	47%	28%
Questionnaire A	63	43	34	140	41%	24%
Difference			6	14		

Group B Questionnaires. (8 pairs of questions.)

Comparison of Determinate Q.F. (A) with False Implication Q.F. (B).

e.g.

- A. "What marks the boundary between U.S.A. and Canada from the Great Lakes to the Rockies?"
- B. "What river marks ?"

	R	W	X	N	$\frac{W}{R+W}$	$\frac{X}{N}$
Questionnaire B	25	131	76	232	84%	33%
Questionnaire A	112	80	32	224	42%	14%
Difference			42	19		

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Group C. Questionnaires. (6 pairs of questions.)

Comparison of Determinate Q.F. (A) with Incomplete Disjunction Q.F. (B).

e.g.

A. "Where is the Great Basin?"

B. "Is the Great Basin between the Sierra Nevada Mountains and the Rockies, or between the Rockies and the Missouri?"

	R	W	X	N	$\frac{W}{R+W}$	$\frac{X}{N}$
Questionnaire B	80	75	19	174	48%	11%
Questionnaire A	38	84	46	168	69%	27%
			Difference		- 21	- 16

Group D Questionnaires. (5 pairs of questions.)

Comparison of Determinate Q.F. (A) with True Implication Q.F. (B).

e.g.

A. "How is wheat sent from the centre of the United States to the great ports?"

B. "What two great waterways help to get wheat from the centre of the United States to the great ports?"

	R	W	X	N	$\frac{W}{R+W}$	$\frac{X}{N}$
Questionnaire B	43	28	74	145	40%	51%
Questionnaire A	42	60	38	140	59%	27%
			Difference		- 19	24

Group E Questionnaires. (9 pairs of questions.)

Comparison of Determinate Q.F. (A) with "Yes-No" Q.F., True and False Implication (B).

e.g.

A. "What parts of the North American coasts are famous for fisheries?"

B. "Are any parts of the North American coasts famous for fisheries?" (True Implication.)

	R	W	X	N	$\frac{W}{R+W}$	$\frac{X}{N}$
Questionnaire B	154	71	33	258	31%	13%
Questionnaire A	81	94	80	255	54%	31%
			Difference		- 23	- 18

(4) DISCUSSION OF THE RESULTS.

In an article on "The Influence of the Form of a Question"¹ Bernard Muscio defines suggestiveness as the percentage ratio

$$\frac{P}{P+N}$$

where P is the number of answers asserting the presence of the object named in the questions, and N the number of answers denying its presence.

e.g. "Did you see an umbrella?" Whether there was, or was not, an umbrella in the picture which had been shown, all the "Yes" answers make up P, and all the "No" answers N.

In a similar way, I have considered suggestiveness as

$$\frac{R}{R+W} \text{ or } \frac{W}{R+W}$$

where the question is seen to lead to Right answers or Wrong answers compared with the answers to questions with little suggestive force either way. This is more fully explained later.

With Muscio, then, I do not inquire into the mental process known as suggestion, whatever that may be. I use the term in strict accord with the definition given above.

It is worth while, however, to note the following definition of suggestion:—

"Suggestion is a process of communication resulting in the acceptance of the communicated proposition in the absence of logically adequate grounds for its acceptance."²

In the statistics of results above the ratios $\frac{W}{R+W}$ and $\frac{X}{N}$ for each question form of each questionnaire are worked out.

From $\frac{W}{R+W}$, in per cent., $\frac{R}{R+W}$ is obtained by inspection by subtracting $\frac{W}{R+W}$ from 100. The difference between the percentage ratios for each questionnaire is the same whether we use $\frac{W}{R+W}$ or $\frac{R}{R+W}$ with, of course, a change of sign.

For instance:

Group A.

$$\frac{W}{R+W} (\text{B Questionnaire}) = 47 \quad \frac{R}{R+W} = 53$$

$$\frac{W}{R+W} (\text{A Questionnaire}) = 41 \quad \frac{R}{R+W} = 59$$

$$\underline{\underline{B - A = 6\% = -6\%}}$$

It is just a matter of measuring from different ends of the 100 scale.

¹ Brit. Journal of Psychology, Volume VIII, 1916.

² Social Psychology, Wm. McDougall. p. 97.

GROUP A.

Comparison of Determinate Q.F. with Determinate Q.F. plus a number.

The differences between the percentage ratios $\frac{R}{R+W}$ and $\frac{X}{N}$ for the two forms of question are small.

$$\frac{R}{R+W} \text{ (B)} - \frac{R}{R+W} \text{ (A)} = -6\%$$

$$\frac{X}{N} \text{ (B)} - \frac{X}{N} \text{ (A)} = 4\%$$

There is therefore no justification for the opinion that one form is more suggestive, or more reliable, than the other. Nor is the caution, measured as the percentage ratio of "I do not know" answers to the total number of answers, very different for the two forms. My opinion, before carrying out the test, was that introducing the number would make the question easier to answer. There is no support for this opinion.

GROUP B.

Comparison of Determinate Q.F.'s with False Implication Q.F.

The latter Q.F. introduces a new problem. When a boy answers "I do not know" to the question :—

"How do the inhabitants of the United States of America protect themselves from the herds of bison which roam about the country?" he is wrong. For he is admitting that the herds do roam about. In measuring the suggestibility of the scholars I have counted "I do not know" answers to questions of B questionnaire, B group, as wrong.

For the comparison of the question forms, however, I have considered these answers in three ways :—

- (i) "I do not know" answers count as wrong answers.
- (ii) The figure in the column $\frac{X}{N}$ is made equal for A and B Questionnaires. This means that the X column for B Questionnaire is credited with 33 "X" answers, and the "W" column loses this number.
- (iii) "I do not know" answers count as genuine "X" answers. (as recorded under Statistics of Results, above).

Each set of figures shows that $\frac{W}{W+R} \%$ (B) is greater than $\frac{W}{W+R} \%$ (A) by over 40%. Using the value of the ratio $\frac{W}{W+R} \%$ (A) as a standard, we see that the suggestion of False Implication Questions is twice that of Determinate Q.F.

The total number of answers considered for these two types of Q.F., i.e., in Group B, was 456.

GROUP C.

Determinate Q.F. compared with Incomplete Disjunction Q.F.

In this case, right answers to questions in Questionnaire B are equivalent to "assertions of presence." Suggestion, therefore, will be defined as $\frac{R}{R+W}$. As we are dealing with the relative suggestiveness of the two question forms, we are taking into account the fact that some of the "assertions of presence" are due to accurate knowledge.

$$\frac{R}{R+W} \text{ (B)} - \frac{R}{R+W} \text{ (A)} = 21\%$$

The suggestiveness of Incomplete Disjunction Q.F. is seen to be 21% greater than that of Determinate Q.F. Using the suggestiveness of Determinate Q.F. as a standard, as before, we see that Incomplete Disjunction Q.F.'s are one and two third times as suggestive as Determinate Q.F.'s. Question content is in a great measure responsible for this. All Disjunction Questions are the same in this respect.

The total number of answers for these two types of Q.F. was 342.

N.B.—It is noteworthy that Binet includes six Complete Disjunction Q.F.'s in his first Questionnaire—which is not supposed by him to be suggestive at all.

GROUP D.

Determinate Q.F. compared with True Implication Q.F.

$$\frac{R}{R+W}\% \text{ (B)} - \frac{R}{R+W}\% \text{ (A)} = 19\%$$

Using $\frac{R}{R+W}\% \text{ (A)}$ as the standard, the True Implication Q.F. is seen to be one and a half times as suggestive as the Determinate Q.F.

The number of answers for these two types of Q.F. was 285.

GROUP E.

Comparison of Determinate Q.F. with "Yes—No" Q.F.

$$\frac{R}{R+W}\% \text{ (B)} - \frac{R}{R+W}\% \text{ (A)} = 23\%$$

Applying the same standard as before, "Yes—No" Q.F.'s are seen to be one and a half times as suggestive as Determinate Q.F.'s.

If we analyse the answers further, and distinguish between "Yes—No" questions where the answers are "Yes" and "Yes—No" questions whose answers are "No," we find that the suggestion is stronger for the former type.

"Yes—No" Q.F. of Group E.

	R	W	X	PERCENTAGE.		
				$\frac{R}{R+W}$	$\frac{X}{N}$	N
Where correct answer is "Yes"	108	44	19	71	11	171
Where correct answer is "No"	46	27	14	63	16	87

THE SUGGESTIVE FORCE OF QUESTIONS

All the Determinate Q.F. of Group E.

R	W	X	$\frac{R}{R+W}$	$\frac{X}{N}$	N
81	94	80	46	31	255

We may now compare with Determinate Q.F.:

First. The "Yes—No" Q.F. whose answer is "Yes."

e.g. "Are any parts of the North American coasts famous for fisheries?"

Second. The "Yes—No" Q.F. whose answer is "No."

e.g. "Do Red Indians pick the cotton for the white man in the hot parts of the United States?"

(Call these "Yes—Yes—No" and "No—Yes—No" Q.F. respectively.)

First. "Yes—Yes—No" Q.F. with Determinate Q.F.

$$\frac{R}{R+W}, \text{ (B)} - \frac{R}{R+W}, \text{ (A)} = 25\%$$

using $\frac{R}{R+W}$ (A) as a standard as before.

The "Yes—Yes—No" Q.F. is 54% more suggestive than the Determinate Q.F.

Second. "No—Yes—No" Q.F. with Determinate Q.F.

$$\frac{R}{R+W}, \text{ (B)} - \frac{R}{R+W}, \text{ (A)} = 17\%$$

The "No—Yes—No" Q.F. is therefore 37% more suggestive than Determinate Q.F.

It is of interest now to compare the two suggestive Q.F.'s, using the Determinate Q.F. as the normal.

Working as before we see that the "Yes—Yes—No" Q.F. is 47% more suggestive than the "No—Yes—No" Q.F.

(25 is 147% of 17.)

This difference might be accounted for by the "No—Yes—No" questions being more difficult than the "Yes—Yes—No" questions. This, I think, can hardly be admitted, when the questions, and the teaching on which they are based, are considered.

Discussion of the Results of the Comparisons of Question Forms in Groups A, B, C, D and E.

Oral questioning is a most important part of the teacher's work. It serves two main purposes:—

1. To test knowledge.
2. To evoke thought and response.

The latter demands that the scholar shall reason intelligently, and often discover knowledge for himself. For testing knowledge, Determinate Question Forms are more valuable than any of the forms named above.

If we regard the suggestiveness of this Question Form as 100 (defining suggestiveness as percentage ratio $\frac{R \text{ or } W}{R + W}$ as explained above) the other question forms are relatively suggestive as follows :—

False Implication Q.F.	....	....	....	200
Incomplete Disjunction Q.F.	....	....	....	160
True Implication Q.F.	....	....	....	150
" Yes—No " Q.F.	....	....	....	150

Let us see what this means when a class of 60 boys, similar to the class at the colliery school, is being questioned. Suppose that where the Determinate Q.F. is used 30 boys are right, and 20 are wrong, in answering a question. By altering the Q.F. to False Implication we should increase the number of boys answering wrongly to 40. The condition with which we must comply is that the suggestiveness of the Q.F. is to be double what it was before. With 40 boys wrong in their answers the calculation of suggestiveness would be as follows :—

$$\frac{W}{R+W} (B) - \frac{W}{R+W} (A) = 80 - 40 = 40\%$$

using $\frac{W}{R+W}$ (A) as the standard we see that the suggestiveness of the question form has been doubled.

If, now, where a Determinate Q.F. is used, 20 boys are right, changing the Q.F. to Incomplete Disjunction Q.F. would increase the number of boys answering correctly to 32.

If the Determinate Q.F. which 20 boys answer correctly is changed to either a True Implication Q.F. or a "Yes—No" Q.F. the number of correct answers is increased to 30.

The size of the increase in the number of accurate (or inaccurate) answers due to altering the question form is, in each case, very astonishing. I am assuming, of course, that the results I have obtained give fair estimates of the suggestiveness of the different Question Forms. Even if the increases are halved, they are still big, and their significance is great.

Suggestive questions have a value : they lead classes of boys along lines of thought prearranged by the teacher. That causing boys to fall into traps such as are provided by false Implication Question Forms is good for them, I admit. They begin to examine "propositions which are put before them" with more care. They become less suggestible. "The least suggestible person is the self-reliant man, of settled convictions, possessing a large store of systematically organised knowledge which he habitually brings to bear in criticism of all statements made to him."¹ Judicious use of the False Implication Q.F. should develop this habit of criticism. Injudicious use may develop contra suggestion.

From the point of view of the teacher, the results indicated in this thesis show definitely that the use of suggestive questions to test knowledge—to determine the success of a lesson, or of some private work by the scholars—is a sign of weakness in teaching, unless a suggestive question is followed up by another demanding proof of knowledge.

¹ Social Psychology, Wm. McDougall. p. 98.

THE SUGGESTIVE FORCE OF QUESTIONS

(5) THE SUGGESTIBILITY OF CLASS B SCHOLARS.

The percentage ratio $\frac{W}{R+W}$ was taken as a measure of the relative suggestibility of the scholars in this class, the answers to fifteen questions of the False Implicative type alone being considered.

Correlation coefficients were calculated from Pearson's Product Moment Formula.

1. Between Suggestibility and Age = - 0.09
2. Between Suggestibility and Performance in the ten minutes test = - 0.3
3. Between Suggestibility and I.Q. = - 0.3

It will be seen that the correlation between age and suggestibility is small, and that the correlation between intelligence and suggestibility is inverse, but also low.

- i. The scatter of the ages of the scholars is great, but young scholars do not seem to be more suggestible than the older ones. Their mutual influence on each other doubtless tends to equalise them in this respect.
- ii. There is no significant evidence that the unsuggestible boy is intelligent compared with the suggestible boy.

The number of boys (29) is too small to furnish convincing evidence on either of these points.

A Critique of the Municipal Secondary School Curriculum.

By PALLISTER BARKAS,

IN the greater part of recent discussion of education the curriculum has been taken for granted. The acknowledged failure of our school system, so far, to produce a nation that the critics can accept as educated, is attributed to parsimony, to wrong methods of teaching the agreed subjects, and to similar causes.

It must always be a good exercise for the young teacher to attempt some examination of the contribution that he expects to make to human life, and of how far the existing teaching, so far as he knows it, meets the requirements which he himself is able to propose. He will no doubt offer many unjustified criticisms and contrive many impracticable reforms. On the other hand, if he does not attempt such an examination at the outset, he will probably neither undertake it at all nor be able to appreciate what others of greater experience have to offer.

It is in such a spirit of irresponsible freedom that I undertake the following critique, or search for principles by which to judge of the Curriculum of the Municipal Secondary School.

The problem of education is one evidence for the solution of which must be drawn from a field so wide, and containing matter so elusive, that no proffered solution will be susceptible of a complete and logical proof. In such a field, the less one troubles oneself about the complex facts of life, the easier it will be to appear logical.

I.

The first and most important question to ask is : What should be the *minimum* curriculum of study in a Municipal Secondary School ?

Various considerations lead to the placing of this question first in order of importance :

First. The majority of children leave school without having acquired either mastery of, or permanent interest in, most of the subjects studied. This may be, and probably to a considerable extent is, due to a healthy instinct of resistance on the part of the children. If the present uneducated condition of our nation is due to a stubborn refusal on the part of youth to submit to perversion, we must consider what content and method of education would be consistent with the mental integrity of the pupil. If it is due to the inability of the majority of the pupils to master so much material as is expected, the first remedy must be to decide upon a minimum which we expect to teach well and thoroughly.

Second, so far as a desired national culture consists in " knowledge about " and " skill in doing " things, two conditions must be fulfilled : (a) There must be a certain amount of knowledge and of skill, as also certain ways of feeling, common to all members of the community, in order that the latter may be a spiritual, not merely a geographical, unity.

(b) Since no man can acquire all knowledge and all skills, yet all are needed, these must be distributed as widely as possible among the population, so that nothing of knowledge or of skill fails to be embodied in a number of individuals large enough to permeate the whole body.

If the "community" to be considered be wider than a single nation, the same principles apply.

The first of these principles underlies the demand that there shall be a curriculum common to *all* schools within the community, wherever the bounds of the community may be fixed. The second emphasizes the demand for a *minimum* common curriculum, so that there may be ample time and energy to spare for studies and pursuits which are not common to all.

Third. Aptitude and interest usually go together. It is a perverting of the mind to force attention where there is no interest; and it is social waste not to cultivate aptitudes where they exist. These two factors cannot be given proper recognition so long as the *common* elements in the curriculum are given undue importance as against the others, or so long as almost the whole time and energy of the school are devoted to them.

The minimum curriculum must, then, be one which shall not normally occupy the whole of the school time-table. It should provide for the acquisition of such knowledge and skill as can be acquired thoroughly, by children of good ability, in considerably less than thirty-five periods per week; and the fewer of these it requires, in their case, the better. For the remaining periods there should be as wide a choice of study as possible among (1) extensions of the standard subjects, (2) other subjects; the children being reasonably free to make their own choice according to interest; and, where the choice has to be made for them, the basis of it being a prediction as to the directions in which the child's interest will most naturally be aroused.

II.

In considering the contents of the curriculum, it must first of all be realised that no subject can claim a place on its own merits, and without facing some test of its *relative* value. There are two reasons for this: First, because the amount of time and energy being limited, the inclusion of one subject involves the exclusion of others; second, because no one of the class-room subject-labels can be taken as meaning one definite subject, having a content and mental and other effects, to which all alike, in using the name, intend to refer. For instance, there is a multitude of possible "history" subjects: English, European; ancient, modern; political, social; and so forth. And it is often overlooked that each of these can be indefinitely differentiated, regard being had to its probable effects on the minds of the children, which effects will vary according to the way in which it is taught. This "way in which it is taught" may be of much more importance than the selection of any one of the subdivisions of the general subject.

In addition, it is necessary to ask oneself not only what is the relative value of any subject, but also *how much* of it must be taught in order to make it worth while to teach *any* of it. For instance, I would be the last to deny that it would be worth while to teach all children a modern language. I do deny, however, that it is worth while to coop them up in a classroom with a French master for four periods a week, under conditions which make it virtually impossible for more than a minute proportion of them to know French, even moderately well, after some years of that elegant punishment.

We have not only to consider the curriculum from the point of view of the ideally desirable, but also from that of the practically possible. This limitation is many-sided. *First*, there is, and always must be, an economic limitation. The foundation of all human life, spiritual as well as physical, is the work done in the production of material wealth. Whoever does not engage in this work must be supported by those who do engage in it. This is the root fact of every possible system of society. A Socialist state, no less than any other, would have to consider how far the producers of material wealth could wisely be burdened with the providing for those whose immediate product was not material, whether these were teachers, pupils, artists, or what not. *Second*, the education offered in the schools should be controlled by the consideration of what actually is to be the future of the pupils concerned. This does not necessarily imply the provision in the secondary school of what is quaintly termed "vocational training." Actually, the secondary school to-day is almost entirely given up to vocational training, though this is only acknowledged in the case of such subjects as shorthand, book-keeping, mechanical drawing, etc. Those who do not take any of these subjects are, nevertheless, subjected to a vocational training of a particularly narrow and obnoxious kind, that namely, of the training, according to the requirements of the University, of potential specialists in arts subjects, and this with little regard to whether the children concerned are likely to reach the University or not. The test by which the work of the Municipal Secondary School is judged to-day is that of the number of successes in the Matriculation or higher examinations. In each subject the programme of school study is drawn up with a view to preparing for this. Yet the vast majority of secondary school children do not proceed to the University; and this majority will be increased in proportion as the numbers in the secondary schools increase. The Municipal Secondary School, instead of being an important contributor to a live and popular national culture, becomes a mere instrument for selecting and preparing a minority of its pupils to become University students, from whom in turn the "specialists" in various ever-narrowing departments of the arts and sciences will be selected. To the seclusion and training of this minority the cultural interests of the vast majority are sacrificed.

But if we assume that democracy is to continue as the political system of civilisation, we must also recognise that the prime business of the school is the education of the mass of the people, and that the selection and training of future specialists, though important, is none the less of secondary importance.

III.

The questions "What ought to be the minimum curriculum of studies common to all?" and "What ought to be the relation of this minimum curriculum to other studies?" can only be answered after this more general question has been answered: "What is the Aim of Education?"

Though the question seems unavoidable, it must be recognised that so stated, it is abstract, and leads direct to the making of those ideal demands which disregard all practical limitations. Being "up in the air," it admits of endless argument, which, being guided almost entirely by temperament, leads, equally logically, in any of several irreconcilable directions. The advocates of each of these use facts rather as the decorations than as the real foundation of their respective conclusions.

A more manageable type of question is one which takes the form: "What ought to be the aim of education, given these instruments, this material equipment, these practical conditions and limitations, and these subjects—given, that is to say, teachers, schools, apparatus, determinations and prejudices in those who have the power to enforce them, available income, and boys and girls of types and from homes such as all these actually are?" This is somewhat the form in which the problem presents itself to educational administrators. Here the solution is to be found partly in the concrete problem itself.

But even here, though the number of possible solutions is severely limited, the solution is not really so pleasantly "determined" as it appears. First, because the factors noted above are always more capable of being moulded than the form of the question suggests; second, because one of the determinants must always be an ideal "Aim of Education" in the mind of the solver, either as a desire of his own, or as that of others who can dominate or intimidate him.

It has been suggested by some sociologists that a scientific determination of objectives in education is possible. Prof. Snedden¹ thinks that a scientific determination of the "values of social life" is possible, and that if only we will gather enough facts, classify and analyse with sufficient care, we shall be able to free the "objectives" of our education from their basis in "faiths and beliefs." Mons. Durkheim² also attempts to prove that ideals are scientifically determinable. His is much the most able effort in this direction that I have so far met with, but his proof amounts only to an ingeniously clothed assertion of his opinion, based on the gratuitous assumption that the *actual* direction of progress in the past will show what *ought* to be its direction in the future.

My own opinion is that from science may come an increasingly stringent definition of the *limiting conditions* imposed on educational and other social aims, but that definition of the aims in their entirety can never so come. Meanwhile, a new generation is growing up, whose education must be planned after some fashion. It seems that we must fall back upon the despised "faiths and beliefs," *faute de mieux*, pending their abolition before the triumphant march of sociology.

¹ "Sociological Determination of Objectives in Education" (1921).

² Les Règles de la Méthode Sociologique. Ch. IV. (especially last two pages)

In what terms then can we state the aims of education : the results in the general population, that we hope or expect to insure, from the education to be given in the Municipal Secondary School ?

In offering an answer to this question we must be content to be empirical, setting out a number of such aims as seem to us to be those of the greatest importance. These may be divided into two kinds : 1. Knowledge and skill ; 2. Habits, attitudes, feeling-reactions, all the more deep-rooted and pervading results, which, though more illusive than the first kind, are also more important.

IV.

1. KNOWLEDGE AND SKILL.

- A. The mental technique required, for practical reasons, to be common to the vast majority in a modern industrial community.
 - a. Reading and Writing.
 - b. Simple Arithmetic—including little more than the four rules, in their application to the ordinarily used weights and measures, and to money.
 - c. General Knowledge of a practical kind, including, e.g., simple rules of health ; a minimum of law, as of employer and employed, landlord and tenant, insurance, hire-purchase, etc.
- B. Some study of evidence, and of logical fallacy in speaking and writing. This is essential in a democratic society, as some protection against journalists, advertisers, mob-orators, and public quacks and humbugs of all sorts.
- C. Physical fitness and adaptability.
- D. Knowledge of the world and of mankind.
- E. A negative requirement. Avoidance of all deification of the intellect in its more abstract workings, of all inculcating of veneration for "white-collar" employments, of all suggestion that manual work must be less skilled or less "intelligent."

2. HABITS, ATTITUDES, FEELINGS, ETC.

Requirements under this head are of a sort to be secured, if at all, rather through methods of organising the school and the subject matter and of presentation, than through any particular choice among recognised subjects. Some of the most important may be stated as follows :—

- A. Habits of independence and self-reliance ;
- B. The habit of questioning and criticising things seen and heard ;
- C. The habit of looking for causal explanations of everyday things ;
- D. Integrity of mind—as shown, for instance, in the refusal to accept and repeat parrot statements ;
- E. Good manners and truthfulness ;
- F. Habit of response to the claims of civilisation ;

- G. Habit of recognising the heroic virtues in their constructive, rather than in their destructive, aspect ;
- H. Habit of generous or æsthetic appreciation, as well as that of utilitarian appreciation. These to be treated in every department as of equal importance ;
- J. Habit of self-expression, of free activity, through arts, crafts, hobbies of an intelligent kind, including the amateur and social provision of amusements, in preference to their provision by professional agencies.

I have set out these requirements as those which occur to me as being the most important. The principal point, however, is to illustrate the view that the problem of the curriculum must be approached from the point of view of such social needs as these, and not from that of the claims of certain "subjects." Of the requirements given, some, and perhaps all in the last resort, are based on dogmas ; and of these not all are universally held. I know of no method of proving or disproving such principles, yet it is upon the tacit assumption of some such as valid that all conscious activity in life proceeds. There is a spiritual struggle for existence, always in active progress, between human mentalities of different types, with the general "nature of things" as judge of their performances. Success in this struggle is shown by the establishment of customs, doctrines, deities, etc., in harmony with the needs of the types that prevail, and by the gradual withering away of the opposing customs, doctrines, deities. By no intellectual process can the outcome of such a struggle be foreseen and demonstrated with certainty.

The first series of requirements set out above provides the basis for a critical examination of school "subjects." The second series affects educational practice in various ways. In the case of casual thinking, for instance, what is required as a constituent of the national culture is the habit of causal thinking about the things of everyday life, as well as about scientifically posed problems. The demand will probably be most effectively met when examples of such thinking simply "crop up" here, there, and everywhere, throughout the work of the school ; it will be least effectively met when it is insisted upon by the chemistry teacher and ignored by every other.

V.

All proposals for reforming the curriculum of the Municipal Secondary School are rendered impracticable by the influence of the University, which is able to insist that those pupils who intend to sit for its examinations shall receive such an education as will prepare them to fall in later with its plan of studies. This demand, if its influence did not extend beyond those pupils to whom it specifically refers, might be excusable enough ; so confined, it would, at any rate, not concern the school teacher to tell the University how to manage its own business. But the difficulty of arranging a special curriculum for this minority of pupils ; the difficulty of foreseeing which pupils will ultimately constitute this minority ; the power and prestige of those parents who expect the school to serve their children in this way ; the knowledge of headmasters

that their schools will be judged in many influential quarters by examination results; the acquiescence of many teachers in that standard of judgment, and in the notion that University work is to be taken as the pattern of cultural performance—all these factors combine to cause the requirements of the University to dominate the education of *all* pupils in the secondary school, however unlikely appearance in that institution may be for the majority of them.

In this triumph of intellectual snobbism the University-trained teacher is strongly tempted to concur. He has been specially trained to get a living by meeting the demand, and is frequently disabled from getting one by any other means—he cannot dig, to beg he is ashamed. The true scholar (University type), obsessed with his own pursuits, frequently pitifully unaware of his own limitations, and, otherwise, the most disinterested of men, willingly acts as wholesaler to the retail operations of the teacher. In all this the child is sacrificed, with the utmost good conscience on the part of the officiating priests and priestesses.

The evil is intensified by the fact that scholarship is more and more tending to become a trade, monopolised by University specialists, instead of being also, as it should, the recreation of intelligent men and women everywhere. One of the favourite methods of gaining distinction in the University world is that of writing books. The order is not in such cases from the pressing need of original thought for expression to the determination to write a book, but from the determination to write a book at all costs to the painful search for something to put in it. In literature, sociology, and philosophy, which lend themselves more readily than the sciences to semi-conscious charlatanism, this leads to the "hashing-up" of opinions of all sorts and of pedantic literary criticisms, which are in danger of becoming of more importance than the great and original works of literature and philosophy to which they refer. The authors add to their highly contemporary fame by the time-honoured device of "taking in each others' washing." Into this system of economy their students are apt to be dragged after them, to addle their own brains before proceeding to perform the like service for even younger victims of the system.

Such evils as are suggested above would be less harmful if they could be confined to the University; so confined, most of them could not strictly be considered as evils at all, since they are the necessary concomitants of the large-scale pursuit of knowledge by men and women who, because of their numbers, must include many of no special ability. What is needed is a point of view from which the work of the schools can be valued without reference to University standards, except in so far as the schools are preparing those older children who will actually proceed to the University. There are only two ways of freeing the schools: first, that of abolishing examinations; second, that of arranging them in some quite different way.

Given freedom, the teacher must become definitely conscious that in the Municipal Secondary School his most important task is that of training for civilised life the average working citizen, who leaves school not for the University but for the office, workshop, mine, railway, etc.

What test of success in his work can the teacher propose to himself? Taking examination results as the test is the sin against the Holy Spirit. Another test, though one that lends itself to mathematical measurements less readily, may be proposed, namely, that the children, when they grow up, and to the day of their death, shall, in ever increasing numbers, of their own will, and for the pure enjoyment of spiritual activity, follow some leisure-hour pursuit in which are exercised their highest faculties of creation and appreciation. Such pursuits may be manual or intellectual, rationalising or intuition, appreciative or creative, or any combination of these, provided only that they have excellence of some kind as their aim. The self-imposed task, done for its own sake, and with joy in the doing of it, is the mark of the man or woman who has received a good education. The measure of a democratic society's culture is the number, the enthusiasm, and the excellence of its amateurs. The test of the school teacher's success is the number of amateurs among his one-time pupils.

The feeling for such pursuits must be cultivated in connection with the school, or it is not likely to develop at all. Its root is pleasure in activity. It follows that a living interest in the subjects taught in the school must be of prime importance if those subjects are to enter effectively into the national culture. In so far as children are bored with the history lesson, to that extent history is prevented from becoming a living part of the national culture; and so with every other subject. A boring method of presenting a subject is from this point of view worse than not presenting it at all. This, however, does not mean that all subjects are to become "soft options." The keenest satisfaction in work is derived from hard work, not from the slack and lackadaisical doing of the least that will be accepted. The highest skill of the teacher has always been the combining of interest with effort. It is, indeed, difficult to believe in the genuineness of either unless accompanied by the other.

Some Experiments on the Speed of Reading and its Improvement.

By C. W. VALENTINE.

INDIVIDUAL variations in the rate of silent reading are very great. In a class of about fifty graduates, for example, one usually finds that, tested by the reading of quite simple material, and when all are reading at top speed with due regard to comprehension of the material, the fastest reader will read three times as much as the slowest.

The writer's interest in the speed of reading was first raised some years ago when he discovered that his own rate of reading was exceedingly slow, less than half that of a friend with whom he compared notes. Now it may be thought, and is indeed sometimes said, that slow reading is no disadvantage, as it means greater reflection and better absorption. Unfortunately, however, one has to read a good deal of material which neither needs nor stimulates much reflection, and which does not deserve absorption. The marker of essays, the reader of newspapers and journals, which must be skimmed at least because they may contain important news or ideas, and even the reviewer of books will appreciate my point. The fast reader of novels certainly seems to lose little by his speed.

There is a good deal of evidence also that the fast reader is not inferior to the slow, even as regards the relative amount of material retained, and that absolutely he retains a good deal more. It is, however, wrong to assume, as some writers do, that capacity for reproduction is the sole test of the value of the reading done. Criticism and the linking up of the ideas with previous knowledge, may be of even greater value, and these would of course slacken the speed of reading. Starch¹ asserts that "the rapid reader comprehends relatively almost as much out of what he reads as the slow reader, and, absolutely, he grasps nearly as many more ideas in a given period of time as is proportional to the extra ground covered." Such a statement can only be taken as referring to the given material with which the particular speed tests were done. It need not be true, and almost certainly is not true, if the difficulty of the material is indefinitely increased.

It is, of course, hardly possible to find whether the slow reader gains more than the fast by way of reflection; the tests just referred to relate to the amount of the given material reproduced. There is evidence, however, that the slow reader in his reproduction introduces more ideas, not in the given material read, than does the fast reader. This in itself, I think, suggests that the slow reader is "filling in" the ideas read with his own thoughts. From the point of view of the accurate reproduction this may lead him astray, so that he appears inferior to the fast reader. From the point of view of maturing wisdom he may gain on his fellow.

Nevertheless the reasons I have given above appear to justify the view that it is very useful to be able to read very fast when one wishes, and that the slowing of speed through mere mechanism and not through reflection is undesirable.

¹ Daniel Starch. "Educational Psychology," p. 284.

A good deal of work has already been done in the problem of the speed of reading, but nearly all in America and very little in this country¹.

The following account of experiments is given as exemplifying the results of a very small amount of practice, and as contributing some evidence on the relation of imagery to the rate of reading. Incidentally I hope it will afford an example of a useful class experiment in psychology with an immediate practical bearing, and that it may stimulate enquiry on several points to which I have only been able to refer briefly, including a number of assumptions, sometimes made by writers on this topic, which I have called in question. My first inclination in considering my own rate of reading was to attribute its slowness to the auditory and motor imagery which accompanies all my silent reading, and consequently my first endeavour was to find out to what extent, if at all, such imagery affected the speed of reading. It is obvious that if the reading is tied to such imagery, the rate of the reading is limited by the speed of the imagery. In my own case I found the speed of such imagery difficult to increase, though not entirely impossible. The only alternative was to try to eliminate it. But this, in my own case, resulted in a vanishing of the meaning from the printed words, as has proved also the case with several subjects of my experiments; the eye passes rapidly over the printed words which become a series of hieroglyphics, apprehended as letters, indeed, but with the word meaning gone. In such cases it seems that somehow the meaning of the words is irrevocably bound up with the auditory or motor images, or both. This does not, however, appear to be the case with all individuals.

THE CORRELATION OF SPEED OF READING WITH AUDITORY AND MOTOR IMAGERY.

With a view to determining roughly the correlation between the speed of reading and auditory and motor imagery I performed a preliminary test with a class of about twenty teachers and students (M.A. and M.Sc. class). Copies of the syllabus of the Education Department at Birmingham University were handed round. This, it was thought, would provide material easy of comprehension and emotionally undisturbing. A definite starting point was fixed for all readers, who were asked to read as fast as possible, consistent with proper comprehension of the meaning. All started reading from the agreed point at a given signal, and stopped when, after two minutes, the signal was given. The number of lines read was then counted.

The students, all of whom had had some previous training in psychology, including experimental work, were then asked to describe the imagery experienced in reading—visual, auditory and motor, and to assign to each a mark, “very vivid,” “vivid,” “moderate,” “weak,” “very weak,” “absent.”

In such an investigation it seems hopeless to attempt anything like an exact correlation. One cannot say that what A calls his “vivid” image is necessarily more vivid than what B calls “moderate.” One

¹ References to researches bearing on this question and summaries and discussion of results will be found in Starch, “Educational Psychology”; W. H. Smith, “The Reading Process”; E. B. Huey, “The Psychology and Pedagogy of Reading”; R. Rusk, “Experimental Education”; Whipple, “Manual of Mental and Physical Tests.”

can, therefore, only take note of extreme cases. The main points from this test, which was only a preliminary skirmish, were :—

- (i) None of the six fastest readers had *motor* images which they would describe as "very vivid" or "vivid."
- (ii) The scatter of "vivid" *visual* and *auditory* images among the slow and fast readers suggested that these types of images had little relation to the rate of reading.

The next experiment was done with a much larger class—of fifty students (Graduate Diploma Class). All of them had done work in experimental psychology, including the study of their own imagery of various types.

Two tests of speed of reading were given on different days. Each student estimated the strength of his visual, auditory and motor imagery in reading, after each test. The number of lines read in the two minutes varied from 47 to 154. The two scores of each student were added and an order arranged based upon the number of lines read. The nature of imagery among the fastest and slowest readers was described as follows :—

Visual Imagery.—Very slight throughout.

Auditory Imagery of ten fastest readers.—Described as: vivid—moderate; vivid—very vivid; moderate—very vivid; moderate—very weak; very vivid; moderate—very vivid; very vivid—moderate; vivid; very vivid; very vivid.

(When the reports were different for the two tests both are given.)

Auditory Imagery of ten slowest readers.—Very vivid—moderate; moderate; vivid; vivid—moderate; vivid; vivid; vivid; very vivid—vivid; vivid; very vivid.

It is clear there is no evidence of any connection between vivid auditory imagery and extreme speed or slowness of reading.

It was otherwise with motor imagery. I may say here that I and others found it so difficult to discriminate between motor imagery and actual incipient movement of tongue, lips and larynx, that I grouped motor imagery and incipient movement together :—

Motor Imagery of ten fastest readers (in order of speed).—None; none; none; very weak; moderate; none; none; none; very weak.

Motor Imagery of ten slowest readers (in order of slowness).—Very vivid; very vivid; moderate; moderate; moderate; weak; moderate; moderate; moderate; moderate.

Giving 1 for "very weak," 2 for "weak," 3 for "moderate," 4 for "vivid," 5 for "very vivid," the total score of the ten fast readers is only 5; that of the ten slowest 33; average score for the ten fastest 0.5 (between "none" and "very weak"), for ten slowest 3.3 (between "moderate" and "vivid").

On the basis of the two tests with simple material it would seem fairly safe to infer, first, that visual or purely auditory imagery has little differentiating influence on the rate of reading; secondly, there is a decided suggestion that very fast reading is rarely if ever accompanied by vivid motor imagery, but that the presence of only faint motor imagery is compatible with very slow reading. In other words, that while the absence of vivid motor imagery is one factor in determining the rate of reading, or is at least correlated with it, it is not the only factor. This would not of itself exclude the possibility of motor imagery *taken in conjunction with speed of motor imagery* being the sole (mechanical) factor. Thus the fast reader with "moderate" motor imagery may

have beaten the slow reader with "moderate" motor imagery because the speed of his (the fast reader's) motor imagery was greater.

In view of the known other elements in the reading process—the number of eye pauses in the line, the length of the pause, the visual span of apprehension, the rapidity of the eye movements—we should not of course expect imagery to be the sole factor in determining speed. And indeed various correlations with speed of reading and other factors have been obtained. The number of eye pauses in particular seems an important factor, though that in its turn is bound up with the span of visual apprehension and the rate of comprehension. The number of eye pauses has been found to increase with the difficulty of the material. Similarly the length of eye pauses has been found to increase with the difficulty of the material. There is evidence that in individual cases length of eye pauses and number of eye pauses may vary alternately and compensate for one another, more difficult material being accommodated for sometimes by longer eye pauses and at other times by more numerous eye pauses¹.

The correlation of number of eye pauses with speed of reading has been estimated by one investigator at .54².

Without special photographic apparatus it is impossible to make certain estimates of the number of eye pauses. This is particularly so in cases where difficult material is being read, where the number of eye movements in one line, including even regressive movements, may be very great. Some of these movements appear to be so slight, mere waverings, that they could not be detected by direct observation. Some of the earlier tests, however, on this point, were done by observation of eye movements merely with a mirror, and it seemed to me possible that, with simple reading material, one might get an indication by direct observation of the influence of the number of at least the main sweeping eye movements, if that influence was very great. A test was therefore tried by the following method. The class was divided into pairs, a reader and an observer. The reader held the book so that its top was about the level of his eyes and the observer sat opposite, quite near, looking over the top of the book at the eyes of the reader. In this way each member of the Diploma Class was tested by his two neighbours. In only two or three cases was a different estimate formed, and I was then called in. I myself tested some of the fastest and slowest readers with the following results:—

Number of main eye pauses made by seven fastest readers	....	....	3—3—4—3—3—4—3
			Average 3-2/7.

Number of main eye pauses made by seven slowest readers	....	....	5, 6 or 7—4, 5, or 6—5—3 or 4—4—4—4.
			Average 4-2/7.

One of the slowest readers, second in the list, was especially hard to judge, as in the latter part of the line the eyes seemed to slur along in a series of short jumps. It is not unlikely that he and the first in the list actually varied the number even of main eye movements in different

¹ See "Silent Reading; A Study of Various Types," by C. H. Judd and G. T. Buswell. University of Chicago, Supplementary Educational Monographs.

² D. Mueller, in an unpublished thesis in the Library of the University of Wisconsin, 1918, quoted by Starch, "Educational Psychology," p. 273.

lines. It has been found that as speed increases with a given length of line, a specific habit of eye pauses for that line tends to be set up. Slowness in setting up the most efficient arrangement of pauses may be one of the causes of the slow reader's poor records.

The first pause near the beginning of the line and the last pause near the end were included in the number of pauses, so that, on the way, the fastest readers paused midway on the average only about once, while the slowest paused twice. Much reliance must not be put upon these very rough estimates, but the results suggest that in the cases tested there was a tendency for the number of eye pauses to increase with decrease of speed, but that this tendency is by no means invariable, which agrees with what has been found by the more accurate photographic methods. It is noteworthy that the two fastest readers had the minimum number of eye pauses and no motor imagery.

It does not seem to me certain, however, that even where it corresponds decidedly to the speed of reading, the number of eye pauses is necessarily an *ultimate* factor in deciding the speed. It is possible that the number of pauses may themselves be increased in number by the slowness of "inner speech" and the necessity for keeping visual impressions and motor imagery approximately coincident. It is significant that the number of pauses has been found to increase for oral as contrasted with silent reading. And even the further fact that the number of pauses tends to increase with the increase of difficulty may depend upon a more ultimate slowing up of motor imagery with increase of difficulty, at least in those cases in which motor imagery is prominent; and further support of this is found in that increase in the number of pauses which take place in oral as contrasted with silent reading¹.

As to the length of the pauses, I could get no evidence without the appropriate apparatus. It is clear that it is one factor in the whole process; indeed, one writer holds that it is the most important factor in determining speed, apart, perhaps, from the number of the pauses². The figures he gives show that the length of pause is greater for oral than it is for silent reading, another fact which fits in with my suggestion that pauses may depend partly upon a more ultimate factor, for example, the speed of inner (or outer) articulation.

I do not, of course, suggest that this is the only or even the main factor in determining the length of the number of eye pauses. Undoubtedly the span of visual apprehension and speed of apprehension of the meaning of the words are important factors. Our present discussion refers solely to mechanism and its influence.

IMPROVEMENT OF SPEED WITH PRACTICE.

Several further experiments were done to test the effect of speed practice in reading. In view of the fact that these experiments were done only about a month before Diploma examinations one could not expect the students to give much time to speed practice. I give the results merely as some indication of what may be done even in a short time.

¹ Cf. the fact, referred to later, that some people deliberately read aloud difficult material, in order, they think, to insure slow reading.

² W. H. Smith, "The Reading Process," p. 117.

THE SPEED OF READING

The class was first divided into two equal groups, on the basis of the average of their scores in the first two tests, care being taken to have a fair number of very fast and very slow readers in each group¹. One group practised speed reading with the syllabus for about ten minutes in class and a few who were able did some home practice during the following week with some other book. As the practice was so far so slight an exact tabulation of results was not worth while, but I may say that of those who had done some practice at home (though only about one-quarter to half an hour) eight made an improvement of over thirty lines over the average of their first two tests, while only two of the unpractised did that ; and seventeen out of nineteen unpractised made less than thirty lines improvement, while only two of the practised were below that limit.

During the next week all the practised group had some speed practice (not with the syllabus) at home. Their own estimates of the time varied as follows :

About 20 minutes (5 students) ; 30 minutes (5 students) ; 35 minutes (4 students) ; 45 minutes (4 students) ; 60 minutes (1 student) ; 75 minutes (2 students) ; 150 minutes (1 student).

After ten minutes' further practice with the syllabus (but not with the same portion as read for the other test) another final test was given with the same portions of the syllabus as had been read in the original tests. The results were as follows : the number of lines read in two minutes now is compared with the average of the first two tests and the gain shown. In two cases there was a loss.

IMPROVEMENT OF SPEED OF READING WITH PRACTICE.

Gain in No. of lines read.	Practised group. No. making given gain.	Unpractised group. No. making given gain.
Between —10 and 0	0	2
,, 1 „ 10	0	1
,, 11 „ 20	0	7
,, 21 „ 30	4	7
,, 31 „ 40	5	3
,, 41 „ 50	3	1 ²
,, 51 „ 60	2	0
,, 61 „ 70	2	0
,, 71 „ 80	3	[1 ³]
,, 81 „ 90	1	0
,, 91 „ 100	0	0
,, 101 „ 110	2	0

¹ An exact arrangement according to the method of equal groups should really be made. I did not contemplate publishing the results of the test at the time.

² This largest increase among the unpractised group was made by the student who was the fastest reader in the first two tests.

³ This was a student whose very low score in the first test, in spite of his having only a moderate degree of motor imagery, puzzled me ; and the student himself expressed the opinion that he failed to do himself justice in the first test. This apparent large increase is therefore unreliable.

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The total gains of the practised group were approximately 1150, those of the unpractised 510. It will be seen that, with the exception of four, all the practised students gained over thirty lines, while with the exception of four none of the unpractised gained over thirty lines. I was surprised to find such a general gain as the result of so little practice, though it must be remembered that ten minutes of this was further practice with lines the same length as those of the test material, so that the specific habit of eye pauses which tends to be set up for a series of lines of any given length would be encouraged. The two students who had gained most included the one who had practised most (150 minutes) and one who had practised 45 minutes.

A number of introspective records may be given. Nineteen of the practising students who tried to repress auditory and motor imagery (as was suggested) reported no success. Nearly all said that the meaning of the words vanished, as I had found to be the case myself. It is possible, as has been suggested, that more prolonged practice would overcome this objection, and some students did think they had increased their speed partly by inhibiting motor imagery. Some tried to get rid of imagery by counting mentally, as several experimenters have recommended, but without success. One found a fluctuation of attention between the counting and the auditory and motor imagery. I find in my own case that counting (mentally), while it seems to get rid of motor imagery, may still be, and is usually, overpowered by auditory imagery of the words. Twelve reported that auditory imagery appeared more vividly in reading more difficult material and also when outside noises interrupted.

I may add here that two students in the experiment still to be discussed, reported that auditory imagery lessened as interest in the reading increased.

A final experiment was done with a class of teachers at the Derby Training College Summer School in August, 1923. The method followed was similar to that used before, but as I expected I was able to get somewhat more practice done even in five days by the teachers, than the students did in fourteen. Unfortunately several teachers had to leave before the test could be taken on the last day of the week, which disturbed the balance of numbers and scores in the practised and unpractised groups.

The results were as follows :—

	Practised Group (7).		Unpractised Group (10).	
Average amount of speed practice.	Average No. of lines read in first two tests.	Average gain in third test.	Average No. of lines read in first two tests.	Average gain in third test.
1 hour and 10 minutes	108	33	94	19

It will be noted that the gain of the practised group, while definitely greater than that of the unpractised, is not so much superior to it as was the case with the Diploma students class (1.7 times as great compared with 2.3), and this is spite of a greater amount of practice. Possibly this is due to the greater average age of the school teachers as compared with the students, the average age probably being thirty-five or more as compared with twenty-one or twenty-two. The numbers of the teachers' class were, of course, much too small on which to generalise, but it may be noted that in respect, at least, of one of the elements involved in the reading process, viz., the visual range of apprehension, it has been found by one investigator that improvement by practice is possible with younger pupils but not with older ones. The question of age, then, may well be an important matter in reference to improvability, whatever elementary function in the whole process is being improved, or one tries to improve, by practice. The point is worthy of further investigation.

Another point of interest which should be noted is the relation between absolute speed and improvability. One might have expected a law of diminishing returns—that the fast reader would have least room for improvement. I had already, however, suspected that this was not the case in the earlier tests, noting for example, that the fastest reader of the Diploma class of fifty made the greatest improvement in the unpractised group. I have not the individual scores now of the whole Diploma class on which to calculate the correlation between speed and improvability due to practice, but the first seven in the first test showed together an improvement of 215 in the second test, compared with only 82 shown by the slowest seven; this, however, was only the repetition of a test, before the practice period.

In the Derby class the practising group was so small that a correlation coefficient would be of little value, but as a mere suggestion I give the actual figures:—

ABSOLUTE SPEED AND IMPROVABILITY.

	Average of first two tests in order of merit.	Gain in third reading after practice.
1st	141	24
2nd	131	45
3rd	123	47
4th	121	23
5th	92	44
6th	74	18
7th	73	32

So far as this goes there is no indication of any relation between absolute speed and improvability, but it must be remembered that this refers only to a very short period of practice, and also that the factor of age may complicate it. In any further tests I would suggest that the factor of age should be attended to. In particular I hope that some readers

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will continue experiments in which much more prolonged practice is carried out, with reports as to imagery and retention of content at various intervals.

The question of *transference of improvement* from practice with a book of given line length, to reading with lines of greater or shorter lengths, would also be of interest. If there is much loss of improvement after such a change, it is fairly certain that the eye pauses are an important element in this particular connection. If on the other hand there is not even a temporary loss of the improvement it is more likely that a modification of imagery is chiefly concerned.

A further interesting point which remains to be cleared up is the relation, if any, between the habit of reading aloud to oneself and the speed of reading or of imagery in reading. In quite another connection it has been my custom to gather statistics from classes of students and teachers as to the number who read aloud to themselves, and as to the reasons for doing so, according to the material used. I give some results gathered on this point.

READING ALOUD TO ONESELF.

Number in Class.	45	50	46	47
Number who at times read poetry aloud to themselves to intensify pleasure....	25	34	36	28
Number who at times read prose aloud to make it clearer in meaning	30	24	23	21
Number who think they would be disturbed in understanding by reading aloud	12	11	15	4
Number with strong auditory imagery who nevertheless find reading aloud a help to understanding	14	14	15	12
Number of these last who think it is done to help concentration, probably by slowing up the reading process	13	13	Enquiry not made.	7

A number who read aloud think it helps to convey the meaning, and this occurred even with students of vivid auditory imagery. In these questions I did not refer to motor imagery ; the point may be worth enquiry. How far do persons whose reading is accompanied by vivid motor imagery and possibly slowed by that, fail to need such slowing up of reading by reading aloud ? Personally I practically never read aloud to myself, and in my own case there is already slow reading and vivid motor imagery.

EDUCATIONAL APPLICATIONS.

From the point of view of the teacher the important question is whether any given method encourages a habit of unnecessarily slow reading. I have mentioned the point that eye pauses have been found to be both more frequent and longer in oral than in silent reading. It would seem also probable that long continued excess of oral over silent reading would encourage the continuance of motor imagery and incipient movements in silent reading, though it is possible that this may depend upon mental type more than upon practice. It is well known that some children develop a habit of half muttering their words in early stages of silent reading. One may see the lips moving even if no sound is made. At early stages this probably helps the apprehension of meaning, which, while bound up with the sound of the words, is not yet intimately associated with the visual symbol. But there may be a danger of such "muttering" or incipient movement continuing when it is unnecessary for comprehension and a drag on speed.

I noticed lip movement occurring in one of my boys when he was reading, at the age of eight. I called his attention to it (after noting his rate of progression), and advised him to avoid "saying" the words to himself. Within a day or two he expressed great delight at the result, saying that he could now read much faster, which a test confirmed. Indeed, given sufficiently simple material he could read almost as fast as myself. (He had read to himself simple stories from the age of six and a half.)

There would seem at least justification for occasional speed practice in silent reading in school, though to the children of course one must give tests of comprehension and retention to ensure a proper reading of the material used for speed practice.

The Play Attitude in Life.

ILLUSTRATED FROM CONTEMPORARY FICTION.

By A. G. HUGHES.

IN a former paper* I have drawn attention to the growing recognition of the value of the play attitude, not only in the work of learning, but also in the realm of industry, and I have made suggestions for maintaining this attitude in the work of teaching. The object of the present paper is to throw light on the meaning of the term "play attitude" as I have used it. In order to meet the criticism that educationists are unduly restricted in their outlook on human nature by their habit of living in comparative isolation from people in other walks of life, most of the illustrations which follow are taken from the writings of contemporary novelists. They, like us, are students of human nature, but from a different angle and over a wider field. The extracts have been collected during about twelve months' casual reading, and not counting books written solely about children which must almost inevitably deal with play, I have found *explicit* references to the play attitude in work, occurring in at least ten per cent. of the novels read. As the books were chosen quite at random so far as this subject is concerned, the result is interesting in showing how large the idea of the play attitude looms to-day in popular philosophies of life.

A subsidiary purpose of this paper is to furnish an illustration of how the study of psychology and education, and the study of literature, may be mutually helpful, the facts and principles of the former "smiling back" to the reader from the passages which illustrate them, with a consequent deepening of appreciation in both subjects.

The play attitude towards life is of course the one instinctively adopted by a normal healthy child. Books about children abound with illustrations of its operation, but perhaps it is most fully and consistently described in "Earlham" by Percy Lubbock (Cape, 1922). This book is a record of the memories of a typical day in a boy's life in a country house, and it provides a most refreshing reminder of how crammed with interest and with action child life is. The boy goes into the kitchen—"bright and lofty, with two large windows on one side of it, another at the end. The flags of the floor are crisp to the tread, the dressers shine with their pots and pans, the huge table is scrubbed to the whiteness of paper. The racks and gratings and oven doors of the range, with the little furnace roaring in the midst of them, are infinitely suggestive; before every meal the artist is engaged in an enchanting game with this magnificent toy." He goes on a river picnic and among the causes contributing to his enjoyment is one which, but for the play attitude, would make it boring. "It was traditional, regularly the question of a water-picnic appeared . . . fitting into its turn like a piece of ritual; so it always was, so it ever should be." Cooking a game: routine a delight: life all too short: such are some of the effects of the play attitude. For a description of the magic of this attitude in child life in a town slum, we may turn to "Gutter Babies" by D. Slade (Heinemann, 1912), where we read of "the

* *The Forum*, Vol. I, No. 1.

tremendous humour of the jest in Guttergarten"; of the "extravagant energies and the splendid joy of being in the swinging enthusiasm and wild ecstasy of Gutterlife." Life lived in the play attitude is a game which seems to recognise no obstacle as insurmountable. But let us return to "Earlham." The boy is alone—"the imagination, unaccountably stirred, sweeps forward with a sudden billowy swing, gathers an armful in the tick of a moment . . ." Somebody comes into the room—"common life shut down upon the child again—so it happened; but so it always happens." This is what Jean Paul Richter would call an effect of the "hoary hand" and it may be further illustrated from "Children of the Dear Cotswolds," by L. Allen Harker (Murray, 1918).

"By lunch time on Saturday Fiammetta was 'thoroughly issasperated' with things in general. Never for one moment . . . left alone. Something was arranged for every minute. The Staceys believed in organised games, 'innocent pastimes varied by intellectual pursuits,' was Uncle Edward's curriculum, and it would have been excellent had there been rather less of the innocent pastimes . . . Fiammetta looked quite pale and exhausted after a morning spent in rounders, clumps, golf croquet, spelling game, Puss-in-the-corner and 'Earth, air, fire and water.' . . . 'I'm so tired,' she sobbed, 'sick and tired of silly games.'"

There is an amusing account in "When every tree was green," by G. F. Bradby (Smith Elder, 1912), of the attempts of a prosy philosopher to enter into the play spirit of children. Before the game began, the girls were deciding that they would have to play if he wanted them to; "it wouldn't be polite not to." And during an interlude in a lion-hunt, we find the boys of the party waiting for his return, "not because they looked forward to it with any pleasure, but because they were kept there by a sense of duty." Add to these unpromising illustrations the picture of "poor old Gums," the play-way teacher in "The Room," by G. B. Stern (Chapman and Hall, 1922), and we begin to wonder if it is inevitable for the presence of an adult to dispel the play attitude. Let us turn to a brighter picture from "Garden Oats," by Alice Herbert (The Bodley Head, 1914).

"In his leisure time my father taught me reading: and he was the finest teacher I have ever met: he made the thing a treat and a delight: he suggested that there was no such fun in the world as learning reading. The idea of 'reading without tears' would have amazed me. Why collocate such wide apart ideas? Who could cry over such a game?"

Not till she was fourteen did the speaker meet a professional play-way teacher, and then "under a clever, sympathetic woman . . . arithmetic became a thing of shapely beauty and a trial of wits." So at last after being severely (and wisely) warned of the danger of adult interference, we find one example admitting the possibility of a clever and sympathetic teacher being able to foster the play attitude. It is perhaps too much to expect any widespread recognition by non-teacher novelists of the fact that the play attitude can be successfully maintained in school education. There is therefore a gap in the illustrations at this point. This gap the reader may fill in for himself with memories from such quasi-novels as those of Mr. A. S. Neill, and from professional books such as Mr. Caldwell Cook's "Play-way." Thus we may conclude at this point that the danger of the "hoary hand" may be avoided by the exercise of common-sense and

sympathy, a combination of qualities which is perhaps best described by the term "sympathetic imagination." The lack of common-sense was obviously the cause of the dismal failure of the genial uncle in the illustration we have cited, just as the lack of genial sympathy may be a handicap to the teacher who prides himself on his stern common-sense. It is interesting here to compare these conclusions with those of Mr. Caldwell Cook, who suggests that the "playmaster" should possess tact, understanding of boys and of his subject, and a spice of the drill sergeant; he should be "a true blend of the genial uncle and the exacting academic teacher." It is hardly surprising therefore to find uncles and teachers not infrequently described in fiction as sure antidotes to the play attitude.

Leaving child and school life behind, we now seek for evidence of the play attitude persisting into adult life. There are two popular fallacies to be contended with here. They are:—

- (1) the lurking suspicion that the play attitude should have no place in those activities we call work;
- (2) the tacit assumption that it cannot be absent from those activities we call games.

In "Mr. Evans," by Cyril Alington (Macmillan, 1922), we find, for example, Miss Merivale deciding that chess is a game, "of course it is, or how would people play it?" The first fallacy may be illustrated from "The Rose of Youth," by Elinor Mordaunt (Cassell, 1915).

"Of course I'd love it—up here above the river with all the cranes and the shipping and the feel of the sea through everything. Why, it wouldn't be like work!"

"Wyebrow glanced up, eyeing him with the rather bleak look of the embryo business man. For work not to seem like work did not seem right, somehow: and for the life of him he could not make out what the river, which smelt infernally at low tide, had got to do with it."

It seems a far cry from the attitude of this business man to the attitude of the boy in the kitchen at Earlham. A picture of the workers from "The Banner," by Hugh F. Spender (Collins, 1920), is still more depressing:—

"By putting men and women to what is merely mechanical work, without giving them decent homes, or cheerful surroundings, or leisure to enjoy their lives, you have stifled their thoughts, you have blunted their hopes, and blinded the eyes of their souls."

But the speaker, believing that "no great movement has ever advanced except by faith," proceeds:

"This need not be. Work need not waste human life as it does. And play—there must be play too, but not in theatrical gardens, with tin flowers and gas sunshine, as one of our great writers describes it, but in true gardens with real flowers and real sunshine and children dancing because of their gladness."

Opportunities for healthy recreative play will do much, but at best such play is only a palliative. A real remedy is hinted at as being possible—"work need not waste human life as it does." It need not, and would not if both masters and men could maintain the play attitude towards life which illuminated their childhood. This fact is aptly illustrated in "The Sheepfold," by Laurence Housman (Duckworth, 1918).

" It was Jane's duty to sweep out the shop every morning while the Marbury family breakfasted. This was the one moment of beauty in Jane's daily round. The shop in its darkened state seemed holy and mysterious, a place to worship in. From the central lunette and the eight small eye-holes, bands and slants of light passed searchingly through a mote-laden air, and moving solemnly from point to point as day advanced, revealed, amid the circumferent gloom, strange patches of colour and problems of form difficult for the eye to solve. The black tea canisters with lettering of tarnished gold appeared then like treasure coffers : sago and rice bins gleamed like snow drifts, Indian corn like amber, candied peel like stalactite, sugar like cut jewels ; strings of onions mounted like spiral columns to the roof ; even the rough sides of deal crates took on a smouldering glory as the grail-bearing beams of day passed over them.

" Through these threads of light, which broke and re-extended across her path, Jane moved with a deft and rapacious energy, sweeping up the accumulated litter of trade ; and as the eddying gold of the raised dust span about, her heart was jubilant at its morning song. . . .

" The circumstances were ordinary enough ; but it was ever with fire in her eye that Jane smote the common chords of life and took stock, for spiritual ends, of the day's routine. Whether she ground coffee, made beds, lit fires, swept shop, or washed stone basement floors, there was always a something behind the task, or within it, that gave space for the mind to move, and lent to her performance of menial offices an air of exaltation which to some mistresses did not seem quite respectful : for the slave who plays at his work forgets his station, and becomes guilty thereby of spiritual presumption."

Lest the reader should object that this is yet another example of the exuberance of youth, it may be well to hear from " Earlham " the voice of a grandmother expostulating with her young granddaughter intent on dealing with needlework in a business-like style. " ' Not like that, dear, not so earnestly ; you should *play* with it, dear, *play* with it '—while she illustrates the right style of negligent grace with easy flourishes of her own needle lightly hovering over her ornamental scrap of white gossamer." Thus we see the play attitude persisting even into old age.

The illustrations without exception have depicted life full of joyousness, and they have contained examples of life full of fun, of adventure, beauty, interest, energy, enthusiasm. They have made clear that in adults the play attitude can be very different from mere childish make-believe—an undeveloped form of the attitude tending to produce a life devoted to idle pretence and empty pleasure-seeking. The aim of play-way educators is therefore to help pupils to continue experiencing in school work as well as in school games, a joy and fullness of life such as was theirs in early childhood, and so prepare the way for the continuance and development of desirable forms of the play attitude in the work and the recreation, in the successes and the disappointments, of the work-a-day life of later years.

It may now be interesting (and perhaps not unhelpful) to indulge in visions of a Utopia where " work is play and play is life : three in one and one in three."¹ We may dream of life,

¹ The mad priest in " John Bull's Other Island," by G. B. Shaw.

"Life, the mother who lets her children play
So seriously busy, trade and craft,"

and of the time when everyone shall in his daily work experience that which

"is much more than being happy.
'Tis hunger of some power in you, that lives
On your heart's welcome for all sorts of luck."¹

Let each one now fill in the details for himself, for there is here no hope of agreement. Mr. H. G. Wells, in a recent flight of the imagination, has given us his picture. "Men like Gods"—the title is suggestive of Mr. Wells' conception of the ultimate possibilities of the transforming power of the play impulse. "Prolonged and expanded in adult life into an insatiable appetite for knowledge and an habitual creative urgency," he likens it to "the jewel on the reptile's head," which, by causing all men and women "to become as little children, learners and makers, had brought Utopia out of the confusions of human life."

¹"The End of the World," by Lascelles Abercrombie. The whole of this play should be read in connection with the subject under discussion.

A Russian Record of Educational Progress.¹

By H. J. W. TILLYARD.

IN education as in most things Russia has always been a land of extremes. Moscow, a great university city with every kind of medical and technical school, yet had sixty per cent. of illiterates in the old days. The children of the aristocracy were usually taught by tutors and governesses, under whose training they learned the necessary subjects for public examinations and in most cases gained also an admirable familiarity with French and English.

The upper middle classes, to which the once proudly self-styled intelligentsia belonged, sent their children to the grammar schools or high schools (called *gymnasiya* for either sex). The teachers were highly qualified after an arduous training, and the pupils were as a rule keen learners, but impatient of discipline.² It has often been observed that the Russians with all their brilliance and quickness of apperception failed through lack of perseverance to achieve lasting results. Turgeniev speaks of a man " who had given extraordinary promise in his youth and, like the rest of us, ended by doing nothing at all." The soundest work in the domain of learning has been done by Russians who have worked abroad or under foreign influences, such as—to mention three great names—Mechnikov at Paris, Sir P. Vinogradoff at Oxford, and Rostovtzeff among archæologists. In business Russia depended largely on German brains. The Deutschrussen, who were loyal Russian subjects, bilingual, but German in their character and diligence, formed the great commercial link between Russia and western Europe. The collapse of Russian trade since the Revolution suggests how indispensable these Russo-Germans were.

In the Orthodox Church there were the seminaries, where the clergy, who were almost a hereditary caste, received a special training which gave them little insight into current western thought.

Then at the bottom of the scale came the village school with its inadequate space and equipment and its often devoted mistress, who of course could not take the children much further than the three R's. The increasing concern of the provincial councils (*Zemstvo*) for education had been a hopeful sign before the War ; but the reactionary central government had no desire for an enlightened people.

Soviet Russia has been such a *terra incognita* that any paper offering the merest shred of genuine information will be eagerly read in this country. The periodical now before us is printed with indifferent type on inferior paper ; but we opened it with uncommon curiosity, in hopes of finding an answer to the question, what is Russia doing for her children? In a Socialist State we might expect two things : uniform primary schooling for all children (as now enforced in many parts of Germany) ; and secondly, State-maintenance, more or less complete, for the children

¹ On the Road to a New School (*Na putyakh k novoy shkole*) Organ of the Pedagogical Section of the State Committee of Education. State Publishing Office : Moscow. No. 1. July, 1922. Pp. 130.

² A somewhat exaggerated picture of a precocious Russian Gymnasistka will be found in the volume of stories by Bunin entitled *The Gentleman from San Francisco*. The term Intelligentsia was, I believe, invented by Turgeniev.

of the workers. The Russian Soviet Government, whatever its original educational plans may have been, has been thwarted by two fatal obstacles—lack of funds and lack of teachers. Nevertheless, an important step has been taken in the opening of summer schools, intended largely for town children. These form the subject of an article in the present number by Mr. I. Chelyustkin. For a foreign reader this straightforward account of work done and difficulties faced, written by an enthusiast who shared in the ups and downs of school life, will stand out among the various theoretical discussions and reports that fill most of the pages.

The school was one of a number in the Petrograd Government, and it had its premises and garden on the banks of the Little Neva. In May, 1919, the first session was held, most of the time being taken up with garden and field work ; food was scarce, and the potatoes and cabbages were a welcome addition to the bill of fare. (Most people in northern Russia had nothing but rye in the winter 1918-19, with rare and scanty rations of fat and salt). The children worked systematically in groups and learned to keep their own discipline. Some of the garden produce gained a prize at a vegetable show. In 1920 the children assembled at the beginning of March and undertook the repair of tools and the building of a landing-stage with steps to the river¹, besides the mending of fences. Trees were felled and ground was cleared for gardens. Cucumbers and other vegetables were sown in frames and in the new plots. Every class had its spades and rakes counted out, and worked at a task set by the instructor. "Laboratory work" was also done, chiefly in botany. Some of the instructors were not qualified to teach anything theoretically, but the better trained teachers gave full explanations to the children, either during garden work or in free hours. "Nature walks" in the neighbourhood, excursions to Petrograd, rowing and swimming, were also undertaken.²

So far the preliminaries ; but in 1920 and 1921 a much more elaborate curriculum was set out based on the following principles : (1) "The first and fundamental object was to spend the summer months in communion with Nature with the maximum effect on the mind and body under such conditions both as regards surroundings and methods of teaching as would remind the children as little as possible of the winter school" (p. 54). (2) Observation of Nature, calculated to deepen the impression made by the winter's teaching. (3) "Development of the ethical and æsthetic sense³ by acquaintance with nature from the artist's point of view." The children are to sketch. (4) Inculcation of corporate feeling and the spirit of co-operation. (5) Practical work of all kinds—gardening, the building of a stage for acting—intended to give a bias towards the practical side of life, which the older schools neglected. (6) To give backward children a chance of making up their leeway.

¹ In March the children must have lived in some heated building, probably a forsaken country-house. For some of their work the help of men was obviously required. Who cooked ?

² We are not told the average age of the children, nor the numbers of the staff. The Soviet education authorities are keen on athletics.

³ Observe the singular. We proceed "All excursions, walks and athletic exercises are directed by the teacher to the development of æsthetic feeling and feeling for nature."

The time table provided for the following subjects :

1. Nature study : (a) weather notes—keeping of simple charts ; (b) work in the garden with observations and a day-book ; (c) collecting of plants, butterflies, and insects. Some children wrote accounts of "Nature walks" and drew the illustrations. More advanced pupils studied agricultural economy, agricultural entomology and botany.
2. Chemistry : chiefly in its bearings on horticulture. The children were encouraged to ask questions of their gardening instructors.¹
3. Physics, similarly treated ; questions of drainage and water supply discussed.
4. Geography, regional and physical.
5. Cosmography and elementary astronomy.²
6. Arithmetic, chiefly in its every-day uses, including distance-judging.
7. Geometry and algebra. (It was found desirable to drop these.)
8. Russian language.³ Chiefly the writing of essays, descriptive of places visited or of nature. A passage from a book (*e.g.*, of Heine or Chateaubriand) might be read aloud to illustrate the subject. Pupils able to translate are encouraged to do so. A remarkable passage follows : "It is essential that one of the themes of literary description or discussion should be *Work*. At the present time when men as a result of exhaustion look upon work as a hardship, it is indispensable to preserve in the pupil's mind a regard for work not merely as a duty but as man's happiness. Suppose that some of the pupils have worked in a factory—then you may get them to describe the difference between such work and ordinary labour. You will encourage them to write stories of the peasants' toil and you will compare the conditions of work in farm and factory. Then you may read aloud descriptions of work in Nekrasov, Nikitin, L. Tolstoy, Zola, and others : explain the causes of their different views about labour and gradually arrive at the conception of free, creative, purposive work—mental or physical—as man's highest happiness. In the conversation-hours you may get the children to write a play entitled 'Work,' or to invent a game in honour of Work" (pp. 58-59).

¹ Nothing is said of the laboratory equipment of the summer schools. The larger town schools no doubt still have much of their "plant" from old days.

² The Russian peasant is said to know his stars well, though probably not so well as the Arab.

³ The language of the "New School" does not strike a foreign reader very happily. Most of the writers use a cumbrous, heavy style, full of loan-words and journalistic tags. Considering the richness of the Russian vocabulary it seems quite needless to transcribe every new expression from French. Of the new official terms made up of initials (like the well-known Cheka and Rosta) five or six, quite unintelligible even to a Russian "emigrant," occur. This mania for initials, which in England has happily subsided since the war, appears to be a fixture in the Soviet system. The new spelling, which has abolished the "hard-sign" and several other useless letters, will be welcomed as a relief both in Russia and among learners of Russian, although most Russian books printed abroad cling to the old way. We wish, however, that the stress-accent could be marked in all printed texts and also the modified *e*, sounding like *yo*, as in the name Potëmkin (pronounced Patyomkin). Not only do the lower classes in Russia occasionally misplace the accent, but the many non-Russian peoples in the Federation find the utmost difficulty in mastering its vagaries. Modern Greek, which prints the accents, is considered easy to read ; and the same practice would deprive Russian of many of its terrors.

9. History. (a) Even here the connexion with garden-work is insisted upon: thus we have—primitive man (pastoral man)—the beginnings of agriculture and settled abodes. (b) Visits to historical monuments in and near Petrograd.

10. Economic history, especially the connexion between agriculture and industry.

11. Foreign languages: “the summer instruction is entirely practical: conversation in a given language during garden-work and during excursions.”

12. Art. Sketching out of doors. Perspective, effects of light and shade, drawing from Nature. Clay-modelling. The children dug clay and brought it home.

13. History of art. This was included in the visits to monuments and conversations about them.

14. Choral singing was held in the school garden; the lessons alternated with those upon the Russian language.

15. Handwork. In the second stage this was confined to repairs. In the first stage a plan was drawn up for teaching simple carpentry useful for gardening purposes. But the scheme was not entirely carried out.

Excursions: Besides Petrograd, visits were paid by some children to Moscow, Pskov, and Murman.

TIME-TABLE.

9—9.45: Tea. 9.45—12.30: Experimental work in laboratory or out of doors. Walks: outings. Gardening.

12.30—1.15: Lunch. 1.15—3: As in morning.

3—4: Physical exercises, swimming lessons, bathing.

4—5: Dinner. 5—6: Rest.

6—7.30: Active amusements. Sport (football, “boybasketball,” rowing).

7.30—8: Supper. 8—9.30: Quiet time. Preparation, reading, chess.

9.30—10: Rest. Games.

Teachers in this country, especially those who have conducted summer schools, will read this programme with interest and we can leave them to make their own comments.

The following article (p. 61) by Miss M. Kh. Sventitski deals with the question, should children under school age (3—7) live in the same school-houses¹ with the older children? The writer holds that they

¹ Owing to the civil war and the famine it is not surprising that many children should have lost or been surrendered by their parents and so have come to the school-colonies or Government homes. The belief current in Europe that the Soviet Government intentionally destroys family life in order to make “Little Communists” does not find corroboration in the New School, although one “emigrant” has told me that any mother may hand over her baby to the Government and escape all further parental duty. Nor can we say how many children are living in the school-colonies. An unfavourable report of such a colony was given in the *Atlantic Monthly*.

The fiction of a community of wives is now exploded. The truth appears to be that divorce, like marriage, is effected by simple registration before a Commissary. According to one writer, marriage may be dissolved in this way on the petition of either party with or without the consent of the other. But a couple, once divorced, cannot be legally reunited.

should, and claims that experiments have justified her view. Although it might be maintained that the bodily needs of the "infants" were better supplied in special nursery-schools, yet the general advantages of mixing with older children outweighed this consideration. The wee mites learned in this way : (1) not to be afraid of strangers but to talk to them cordially and freely ; (2) to climb trees, to handle frogs and caterpillars, to plunge into rivers ; (3) to work "for the good of all," not merely to play selfishly. Some short sketches of their common life are then given. We translate one. 5th May. House No. 3. Sunshine : a still, warm day. On the verandah steps sits Olga, a schoolgirl of 12. Round her a little throng of "primaries," grouped in unconstrained attitudes. Olga is telling a story. The children listen with bated breath. There is no one on the terrace, neither child nor teacher. Perfect quiet, only Olga's babbling voice. I approach. Basil waves his hands and whispers "Go away, go away. Don't bother!" I leave the verandah and I hear, "Will he find the fire-bird?" "Let him find it; let him, Olga. He's good." "And his brothers were horrid." "Well, you listen!" says Olga ; and again silence. One further quotation : "They are tiny tots, so thin and bare-footed. But how their eyes flash; and their voices have such a ring." Some remarks on discipline and punishments (or their absence) conclude the article.

Miss N. Tamarinov describes the rehearsal and performance of Schiller's "William Tell," by a club of children from 14-16 years. Her article is entitled "The staging of a play at a club as an impulse towards the manifestation of creative effort, activity, the love of knowledge, and corporate feeling among children."

Among the theoretical studies that of G. Gordon entitled "The New School," claims the first place. The so-called Work-School (*Trudovaya Shkola*) is intended "to prepare the future citizen for life, or, more properly, to equip the child with all the means of acquiring the knowledge, understanding, and habits necessary for the stern struggle of life." The obstacles mentioned by Mr. Gordon are the short time during which attendance is given; the lack of books, buildings and appliances; and, thirdly, the entire absence of suitable teachers. The main idea of the new school is the so-called "complex method," by which the school lessons are to be correlated to some technical process within the children's purview, *e.g.*, agriculture for country children or some kind of manufacture for town children. (Home industries and handwork are apparently not contemplated in the scheme.) In school this correlation has a very simple use. The children are to clean the windows, sweep the floors and clear away rubbish; and, when doing so, they are to get a lesson on the physical and chemical processes involved (p. 9). Evidently an improvement on Dotheboys Hall. The school is to instil the principles of "collectivism," but we are not told how this should be done; no mention of definite Marxian teaching can be discovered.¹ Religious instruction has been banished from the schools. But apart from this the editor considers that the results of five years' experimentation with new methods have been mainly negative. Other articles on the same

¹ Summer courses in Marxian economics were held for teachers in 1923 and attendance in some instances was compulsory.

lines are contributed by S. T. Shatski ("The School for the Children or the Children for the School," p. 15). Miss N. Krupski ("The Task of a Primary School," p. 28). P. Blonski, editor ("The Pedagogic Task of an Elementary School," p. 36). Several reports of discussions and conferences are also given. "On a school with a bias towards rural economy" (p. 44). "Conference at Moscow of science-teachers in Russian schools" (p. 76). "Conference on experimental schools and on report of a commission" (p. 81). Many pages are taken up with discussions and summaries of articles in European and American educational reviews, with notices of Russian books and journals. Finally there is a list of educational books printed and printing at the Soviet Government's Press, or recognised for use in Government schools and colleges.

An official periodical of the Soviet Government is bound to give a favourable account of the schools in Russia ; but something must be added of the allegations made by the other side. The exiles to whom I spoke on the matter were of opinion that the present Government had only a limited number of reorganised schools, near the cities most visited by foreigners. The visitor (usually ignorant of Russian) would be "shown round" by a well-trained interpreter and would report accordingly to the Press at home. Meanwhile we are told that the provincial and village schools are either closed or in a state of sad neglect. On the other hand we had a letter from a village in the Moscow Government quite off the beaten track, stating that the village school was open, under the same mistress as in 1914, but in a new building. It is generally admitted that illiteracy has increased since the Revolution, that the technical equipment of the younger Russian workpeople is beneath contempt, and that the new higher educational institutions founded by the Soviet Government have been a failure.¹

Whatever our views may be upon the Soviet system, we must all admit that in the reorganized Russian schools lies the hope for the country's future;¹ and we gather from the periodical now before us that the teachers and inspectors and officials in charge of the schools have an immense zeal for the cause of education, they have the courage

¹ A scathing criticism of the University system recently appeared in the *Slavonic Review*. A Bohemian (German) newspaper (July, 1923) had a statement that students at Moscow had been reprimanded for playing the guitar as a "middle-class" instrument, and their guitars confiscated. At Odessa, when the Bolsheviks took possession of the town, they dismissed the Keeper of the Museum and put the hall-porter in charge. Our readers may perhaps like to have the battle-cry of the Bolshevik revolutionaries, as sung by the Reds. It was given to us by a Siberian "emigrant" as follows: "Ne nádo nam monárchii. Ne nádo nam Tsaryá. Bey burzhuázi,—Továřishchi, urá !" (We don't want no monarchs. We don't want no Czar.—Thrash the middle-classes : Comrades, hurrah !)

Lunacharski's report (December 24th, 1922) admits among other things that (1) the percentage of children at school had fallen from 75 per cent. in 1920 to 38 per cent. in 1922 (children under eleven are meant). (2) Many of the school-colonies have been abandoned through lack of funds and the children have been, where possible, sent back to their parents. (3) Teachers' salaries are the lowest on the Government scale, and are reckoned at 12 per cent. of the "minimum subsistence allowance." (The woodworkers head the list with 81 per cent.)

to try new methods, and they have an open ear for advice and information from Western Europe and America. What we ardently desire is to see the veil lifted that hides post-revolutionary Russia from our eyes and allows the wildest statements about her to pass unchallenged. This can only happen when private persons of all ranks of society are admitted freely into the country. A "mission" or delegation, if its members ever learn the truth, is usually prevented from disclosing it. Officials and diplomatists are far too cautious to enlighten the general public. And equally we look forward to the time when Russians of all shades of opinion may make their views known in England, not by pamphlets and manifestoes, but in friendly talk and discussion with ordinary citizens. When that day comes our teachers and friends of education in this country will be the foremost in exchange of views with their Russian colleagues and in mutual encouragement and support.

¹ Another bright spot in the picture is the Russian section of the University of Prague, where 3,000 Russians (students and "dons") are diligently at work under the guidance of Prof. P. Struve and other eminent scholars. The Government of Czechoslovakia gives scholarships and allowances to all. A Faculty of Law has been set up with lectures in Russian; and courses in Russian are given in other departments. The Czech language, being akin to Russian, is quickly mastered by the students, who also attend many lectures in the Bohemian University.

Research in Education.

THE British Psychological Society has recently formed a Committee for Research in Education. One of the purposes of this Committee being to draw attention to the great need for research in education, the following statement of educational problems which call for investigation by psychological methods has been prepared. It is hoped that this will help to arouse interest among those teachers who have a sufficient knowledge of psychology and some experience of experimental methods. The Committee will be glad to give advice and assistance to those able to undertake research, and the Honorary Secretary (Mrs. S. S. Brierley, M.A., Forum Club, 6, Grosvenor Place, Hyde Park Corner, S.W.) will answer any enquiries.

SOME PROBLEMS IN NEED OF INVESTIGATION.

A. GENERAL.

1. *Mental Tests.*

- (a) The upper limit of the growth of intelligence.
 - The time element in intelligence tests.
 - The effect of practice in intelligence tests.
 - The constancy of the I.Q. and the prediction value of tested ability. The relation of ability at (say) 7, 11, 13, and 18. Are there "late bloomers"? If so, is the "late blooming" general or confined to special functions? If it exists, to what is it due?
 - Tests for supernormals: the effectiveness of the existing system of scholarship examinations in selecting supernormal children of different ages and for different purposes, with special reference to the discovery of supernormal children among the poorer social classes.
 - Tests for practical ability.
 - The standardisation of tests, group and individuals.
- (b) Emotional factors in results of tests; specific and general.
 - "Unconscious" factors in intelligence testing.
 - Tests for emotional and temperamental characteristics.
- (c) The relation of character to intelligence.
- (d) Tests for specific abilities—vocational tests.
- (e) Unit of measurement of intelligence.

2. *Tests of Attainments.*

- Standardisation of tests in fundamental subjects.
- Subject.
- Standardisation of tests in Secondary School subjects.
- Tests of general knowledge.
- Scales of marking.
- Validity of older and new methods of examining.

3. *Correlation of Mental Age and Attainments.*

- (a) For the purpose of examining.
- (b) For the purpose of teaching—economy of time. What aspects of a subject can be most effectively treated at a given mental age? Experiments on the results of postponing teaching in certain subjects, e.g., foreign languages, formal arithmetic, algebra, formal geometry.
 - Tests for specific abilities in relation to age of specialisation.
 - Tests for potential ability in respect of certain school subjects (compare those of Dr. Annie Rogers for mathematics). For instance, is it possible to predict whether it would or would not be profitable to make a given pupil learn a foreign language? And whether this should be done for reading or for speech purposes? At what age is the prediction first possible?
- Advisability of segregating supernormals.

RESEARCH IN EDUCATION

4. *Methods of Teaching.*

Methods of teaching in particular subjects, *e.g.*, reading, languages, science mathematics.

Methods of teaching for special types of children.

Fatigue value of different subjects ; over-pressure.

The most valuable length and distribution of intervals and holidays.

The relative value of formal drill and "the play way," *e.g.*, how far is it desirable to teach geography and geometry as part of scout teaching?

What is the reaction of school-teaching on the "creative faculties"?

Revision periods—best interval between learning and revision.

5. *The Study of Individual Children.*

Long-period observations of individuals—intellectual, emotional, and moral characteristics in relation to home and family conditions, school, and occupation.

The following up of children on leaving school ; the study of later career in relation to school history and psychological records, and to conditions of particular occupation.

The study of particular types of children—*e.g.*, delinquent, neurotic, supernormal.

The distribution and history of the "creative faculties" (as shown particularly in the production of original literature, music, drawing, etc.) What is the curve of distribution at different ages?

What is the action of self-criticism and school teaching upon these faculties?

In particular, what is the proper interpretation of the apparent difference between the adolescent and the child in respect of "creative" impulses in these regions?

How far do specific interests depend upon "nature"?

How far are they a product of "nurture"? In particular, are there children of good natural ability, whose interests cannot be awakened by suitable school teaching? If so, why not?

The correlation of interest and ability.

An assessment of the results of adopting a vocational aim during adolescent years.

6. *Special Group Differences.*

(a) Racial differences, mental and physical.

(b) Family, hereditary factors.

(c) Social status ; the handicaps of the supernormal child from the poor home.

(d) Sex differences, and the relation of these to differentiation of curricula, *e.g.*, how far (if at all) does the natural *tempo* of intellectual development differ in the sexes.

7. *Group Psychology.*

(a) In relation to class instruction.

The appropriate place of class and individual methods of instruction.

(b) In relation to discipline.

The influence of different types of discipline on different types of children. Incentives (including punishment).

8. *Psycho-analysis.*

Its educational bearings. (a) The educational value of the psycho-analytic technique. (b) The knowledge of child psychology resulting from the technique. The relation of psycho-analytic theories to the problem of discipline. The social development and education of children under eight years of age; and of adolescents. Evidence for the repetition of infantile phases in adolescence. The incidence of psycho-neurosis in childhood. The dreams and fantasies of individual children in relation to the problem of the creative imagination and to the emotional problems of school and family life.

B. MORE SPECIAL PROBLEMS.

- (1) The functional value of visual and other imagery in relation to school subjects, especially those involving reasoning.
In particular the possibility of the useful organisation of imagery (*e.g.*, of "number forms" in recording for reproduction the results of manipulating numbers).
- (2) The alleged differing reactions of boys and girls towards specific subjects (*e.g.*, mathematics, geography, mechanics). (Mr. Fairgrieve has collected data for geography by a careful scrutiny of examination answers.)
- (3) "Sense-preference" in learning, how far is it natural, how far due to accidents of teaching?
- (4) A census of spelling errors and of syntactical difficulties at different ages.
- (5) The value of different types of "composition" in training written expression; dependence of that value upon psychological type of the pupil.
- (6) Specific studies of the results of "project" methods (as contrasted with formal teaching) as regards accuracy, permanence and availability of knowledge. The early stages in teaching reading, writing and arithmetic would be included.
- (7) (Connected with 6.) The accuracy, permanence and availability of knowledge acquired "incidentally" (*e.g.*, of reading and writing, of the grammar of English and other languages).
- (8) An experimental examination of the basal assumption of the "direct" method of teaching a foreign language.
- (9) Specific studies of the development of the power to interpret and use symbolism (*e.g.*, maps in geography, algebraic formulæ). An analysis of the functional value of different types of symbolism (*e.g.*, graphic as contrasted with algebraic methods in teaching mathematics).
- (10) Detailed studies of children's reactions to specific teaching methods (*cf.* Dr. Ballard's and Mr. Winch's inquiries in arithmetic).
- (11) The effect of rest-intervals (*e.g.*, dropping a subject for a term) upon progress in school subjects.
- (12) Studies of the loss of the results of school teaching after leaving school.
- (13) Experiments upon the reliability of brief methods of examining knowledge (*e.g.*, the "missing word" method).

The Nature of "Intelligence" and the Principles of Cognition.

By Professor C. Spearman. London: Macmillan and Co., Ltd., 1923.
Pp. viii.+358. Price, 15s. net.

PROFESSOR Spearman's book has been long and eagerly expected, and has now at length appeared. It has already been hailed by one early reviewer, himself in the first rank as an educationist, psychologist, and mathematician, as "a very remarkable and perhaps epoch-making work."¹ However divergent their own conceptions may be, those who study the new volume will be forced to admit that such high praise from so critical an authority is well merited and well achieved.

In a brief review there can be no room for any account or criticism of Professor Spearman's detailed arguments and evidence. It will be possible only to give a short epitome of the main lines of his discussion.

The first two chapters of the book are historical and critical. After summarising the course of recent experimental work on tests of intelligence, Professor Spearman finds little difficulty in demonstrating that no definition of intelligence, scientifically based and generally accepted, has hitherto been reached. As Dr. Ballard wittily put it: "While the teacher tries to cultivate intelligence, and the psychologist tries to measure intelligence, nobody seems to know precisely what intelligence is." Professor Spearman, therefore, enquires—what is the next most profitable step? It lies, he argues, in a return to general psychology, perhaps even beyond it, to a theory of knowledge. "No serviceable definition," he writes, "can possibly be found for general intelligence, until the framework of the entire psychology of cognition is firmly established." This ambitious task, a radical search for "ultimate laws," is the main object of his book.

The main body of the work is divided into two parts—called "constructive" and "applicative" respectively. The constructive portion consists in the tentative formulation of fundamental principles. These principles or laws, formulated for the psychology of cognition, are, at first sight, analogous to the laws or generalisations formulated by Mr. Shand for the psychology of character, or, perhaps still more closely, to J. S. Mill's "general laws of mind." They are fewer in number and more fundamental in nature than all but the simplest of Mr. Shand's twelve dozen laws; and aim rather, like the "general laws" of Mill, at furnishing psychology with a body of first principles comparable with the principles of the physical sciences.

Dr. Spearman discovers eight such "ultimate laws." The first three are said to "govern cognition in respect of quality." They deal respectively with the "apprehension of experience," the "education of relations," and the "education of correlates"; and are expressed as follows: (1) "Any lived experience tends to evoke immediately a knowing of its characters and experiencer"; (2) "The mentally presenting of any two or more characters (simple or complex) tends to evoke immediately a knowing of relation between them"; (3) "The presenting of any character together with any relation tends to evoke immediately a knowing of the correlative character." These three principles form the basis

¹ Professor Nunn, *British Journal of Psychology*, xiv, i, 102.

of Prof. Spearman's scheme. Between them they generate everything that emerges in the field of awareness, and "govern cognition in respect of quality." They are, as he calls them, "neogenetic principles."

It will be immediately observed that Professor Spearman's formulation of these three laws is rich in problems both for discussion and for experiment. Many questions will spring at once to the mind of the reflective reader. Does not "lived experience" (he may ask) consist in, rather than "tend to evoke," a "knowing of its characters"? Does it tend to evoke the "knowing of the experiencer" quite as "immediately" as it tends to evoke the "knowing of its own characters" as an experience? Is the "tendency to evoke the knowing of a relation" quite as "immediate or quite the same sort of "tendency," as the "tendency to evoke the knowing of the characters" of the experience itself? Do all or any relations come to awareness solely by way of education? Are not some of them, at any rate, directly apprehended as objects of experience themselves? Is the education of correlates any more than a generalised form of what older writers inaccurately termed association by similars, and what Stout¹ (following Thomas Brown) has termed "relative suggestion"? In short, are the distinctions between apprehending and educating, and again between educating relations and educating correlates, drawn quite at the right places? Are they quite as sharp in fact as they are here represented in theory? These questions are here put forward, not because Professor Spearman has entirely ignored them or in any degree failed to answer them but simply to indicate the profound and almost metaphysical problems which his argument at once arouses.

His five remaining principles are described as "governing cognition in respect of quantity." They are stated thus: (4) "Every mind tends to keep its total simultaneous cognitive output constant in quantity, however varying in quality"; (5) "The occurrence of any cognitive event produces a tendency for it to occur afterwards"; (6) "The occurrence of any cognitive event produces a tendency opposed to its occurring afterwards"; (7) "The intensity of cognition can be controlled by conation"; (8) "Every manifestation of the preceding four quantitative principles is superposed upon, as its ultimate basis, certain primordial but variable individual potencies." These latter laws or principles, it will be observed, state the fundamental facts and define the basic conceptions of mental energy, mental retentivity, mental fatigue, conative control, and individual differences in mental capacity. In spite of their

¹ It will be seen that Professor Spearman's examination of cognition often traverses the same ground and treats of the same problems as Professor Stout's "Analytic Psychology." To one brought up very largely on the latter volume it will seem significant that an English psychologist, attempting afresh an analysis of cognition, should make but one explicit allusion to that earlier work. Professor Spearman, in a pregnant footnote, seems to touch, with his usual sureness, the weak spot of Professor Stout's exposition. "Stout appears not to have carried the analysis of the process to the point of discovering the dominant part played by the relations involved: the very word relation is hardly mentioned by him." It is a matter of some comfort that, in the earlier pages of this journal dealing with intelligence and intelligence tests, the importance of the "perception and construction of relations" has from time to time been stressed ("Experimental Tests of Higher Mental Processes," I, ii, 100-104. "The Development of Reasoning in School Children," V, iii, 127).

greater number, these five quantitative laws have not perhaps the same air of systematic completeness as the three qualitative. But, in the use that is made of them, it would be hard to maintain that more might be added or that any might be dispensed with.

It is the view of Professor Spearman that these eight principles, together with the mental processes, simple and compound, in which they become manifest, "exhaust the whole scope of cognition ; and must serve as the master-key to all scientific cognitive analysis."

It is always interesting, when a psychologist writes on cognition, to ask what are his views upon conation ; when he discusses knowledge and intelligence, what assumptions does he make about feeling and will ? Spearman, following Ach, recognises that conation, "the act of willing," as such, is immediately given in experience ; and he briefly acknowledges that conation, perhaps even affection, may exercise an immediate influence in regulating cognitive intensity. To what some may think the most important contribution to recent psychology—the doctrines of psycho-analysis—he makes but two or three short allusions. So far as the psychoanalysts maintain the possibility of uncognised experience, Spearman (as the wording of his first principle is meant to imply) is with them. His seventh principle—that cognitive intensity may be controlled by conation—expresses, he believes, "the main facts furnishing the bases of the theories of Freud and Jung." And, finally, he believes that even the more elaborate theories about dreams and allied phenomena—particularly those of symbolism—are reducible to the basis principle of "correlate-eduction."

In the second part of his exposition, Dr. Spearman applies his principles to elucidate all the main processes of cognition under the four traditional heads—perception, intellect, memory, and imagination. He finds that these "classical faculties," and, indeed, all other faculties that have been at any time suggested, may be completely reduced to terms of his fundamental principles and processes. Intelligence, he concludes, "covers all three neogenetic principles (apprehension of experience, eduction of relations, and eduction of correlates) in every one of their manifestations." Hence, what is really measured by the final result of mixed intelligence tests "is the factor—should one exist—which, amid continual diversification otherwise, persistently enters into them all." This, it would appear, Professor Spearman identifies with "the potential of general energy."

Whatever may be thought of the details of Professor Spearman's general position, there can be no dispute that his scheme is a most attractive one. For the purposes of the educational theorist and of those who devise and investigate practical tests of intellectual processes, his analysis will unfailingly prove profoundly suggestive and inspiring. As the critic re-reads what first of all seemed the more dubious or dogmatic parts of the exposition, he is inevitably struck with the way in which, as the briefest clause or the slightest reference will often show upon closer study, most of his own objections had been foreseen and concisely dealt with, and most of the writer's implicit assumptions had been really based upon long thought, careful experiment, or wide acquaintance with the best of the previous literature. Is it too much to say that of all the many books upon psychology, published in England during recent years, this is the most important?

CYRIL BURT.

Mental and Scholastic Tests among retarded Children,

Physically Defective, Canal Boat and Gipsy Children, and Backward Children in ordinary Elementary Schools. An Enquiry into the Effects of Schooling on the Various Tests. Board of Education. Educational Pamphlets. No. 44. Pp. 92.

THIS booklet would be noteworthy on the sole ground that it is the first document issued by the Board of Education on the question of mental tests. But it has other and more intrinsic claims upon our attention. It is a careful and suggestive piece of research carried out with much skill by Mr. Hugh Gordon, H.M.I., who has applied the Stanford Revision of the Binet-Simon Tests to four types of retarded children.

Mr. Gordon puts his general conclusions thus :

- “ (1) From the results obtained among children who get most of their education at school and very little at home it is very evident that the mental tests used do not measure their native ability apart from schooling, except in the case of children under six or seven years of age.
- “ (2) It would appear that standardised (for age) tests in scholastic subjects, if properly used, would prove of the greatest value to teachers and others.”

With these cautious conclusions nobody can quarrel. They are not only justified by the evidence presented by the author but they are in accordance with the conclusions arrived at by other English psychologists who have interested themselves in mental tests, and by the more responsible Americal psychologists. Dr. Burt has abundantly shown that the Binet tests are a very imperfect instrument for grading native intelligence : he has pointed out their marked literary and scholastic bias ; and he has advocated and initiated a quest for a more scientific system. As for Mr. Gordon’s second conclusion, it represents what some of us have been boldly asserting for many years.

It is clear, therefore, that the significance of Mr. Gordon’s research does not lie in his final verdict ; it is really to be found in his *obiter dicta* and in the cumulative suggestiveness of the evidence he submits. If he does not always tell us which way the wind blows, he does not neglect to show us straws bending persistently in one direction. To the expert, therefore, who can rightly weigh the evidence, the document is of great interest and value. To the reader, however, unaccustomed to statistics and unfamiliar with correlation coefficients, the document is not free from danger. It is not free from danger because in spite of the admirable spirit of impartiality in which Mr. Gordon has pursued his inquiry, and in spite of the reserve with which he himself draws deductions, the ordinary reader is liable to infer more from the facts than the facts themselves warrant. These fears are not groundless, for unwarrantable deductions have already been drawn.

I will try, therefore, to discriminate between what may be legitimately inferred from Mr. Gordon’s data, and what may not be legitimately inferred. In the first place Mr. Gordon has undoubtedly shown that Binet’s

tests are not entirely independent of schooling—that when applied to children who rarely or never attend school they have not the same validity as when applied to ordinary school children. In other words the intelligence quotient (or I.Q.) is not a constant ratio unaffected by education. Terman is quoted as holding the opposite view: “That the lack of schooling does not prevent a subject from earning an average or superior score in the test is shown by the cases of S.S. and Gipsy Mary.”

It is but fair to Terman, however, to point out that on p. 12 of the same book (“The Intelligence of School Children”), he writes as follows :

“ Its (the Binet Scale’s) use in any given case takes for granted that the ordinary and all but inevitable social contacts have been made. . . . Children who have attended school for any considerable time meet all these requirements, whatever the social status of the home.”

We readily concede the point that the Binet scale has limitations—that it cannot be applied with confidence to unschooled children beyond the age of six—but we still maintain that it is serviceable among ordinary school children. That the I.Q. varies slightly even among school children Terman himself has shown, and his findings have been verified in England by Mr. P. L. Gray and Mr. R. E. Marsden. The range of variation is small, and its amount is known. The question of the general usefulness of the Binet tests is untouched by Mr. Gordon’s researches. The numbers of out-of-school children to which he has shown the tests to be inapplicable is so small as to be negligible in comparison with the myriads to whom they are applicable.

Again, the general problem of intelligence, its nature, its growth, and its educability, also remains untouched. Even if the Binet tests had been found to be worthless, the search for real intelligence tests would still go on. And though the I.Q. (as measured by the Binet scale) varied as much as the British climate, there would still remain the question whether there is not a real mental ratio which is free from these variations and is a trustworthy index of mental power. All wider researches point to the existence of such a ratio. Indeed, it has been found in the very children tested by Mr. Gordon. For they have again been tested (at Mr. Gordon’s own suggestion) by Miss Gaw with performance tests which do not involve the use of language: and although the research is not yet complete I am authorised by Miss Gaw to say that those already obtained are at variance with those obtained from the Binet tests. They indicate a natural growth of intelligence which is not affected by schooling and is not detected by the Binet scale.

It is on the second count, however, that misconceptions are most liable to arise; for there is in the document a strong suggestion that intelligence tests are superfluous, since educational tests will do just as well. The educational tests used by Mr. Gordon happen to be my own: they are the three simple one-minute tests in reading, addition, and subtraction given on pp. 136 and 187 of “Mental Tests.” Altogether they take about five minutes to administer, while the Binet tests take from half an hour to an hour. And yet with these retarded children the intelligence quotient and the educational quotient (where it could be discovered)

were in many cases almost identical. This being so, why not give the educational tests only? Why trouble about intelligence tests if they tell us no more than the scholastic tests? The reply is obvious. The correspondence between the two kinds of results is too incomplete. They overlap but do not coincide. The discrepant cases are the interesting and important cases. And that there are discrepancies is shown by the fact that in none of Mr. Gordon's groups does the correlation between the mental ratio and the educational ratio amount to .8, a degree which is quite compatible with a few large individual differences. In fine, the educational tests in question are very convenient, and are very useful as a rough measure of ability, but they can never take the place of a careful and detailed testing of all-round intelligence.

There is another quite obvious reason why Mr. Gordon should have found a positive correlation between intelligence (as measured by the Binet tests) and school attendance. Virtually the whole of the intellectual training of the children examined was obtained at school. The basal difference between an intelligence test and a scholastic test is that the former takes into account the whole of the social environment—the home, the street, and the school—while the latter takes into account the school only. In the case of children whose out-of-school lives are confined to a canal boat, or a gipsy's tent, or a sick room there is a very meagre out-of-school education; and the school training is the only training they get. We are not surprised therefore to find so high a correlation as .313 between the I.Q. and attendance in the case of the physically defective children, and .283 in the case of gipsy children. When, however, the children make the usual "social contacts," as Terman phrases it, as in the "backward classes," Mr. Gordon did not find a positive correlation between the I.Q. and attendance. In fact he found a negative correlation of .162. Not that one can attach much importance to a correlation of .162, or indeed to a correlation of .313.

One should exercise the utmost caution in interpreting a single correlation coefficient. The evidence they afford is generally presumptive rather than conclusive; for they deal with probabilities, not with certainties. A single correlation coefficient is doubly precarious: it is a probable indication of what will probably happen in other instances. Let me illustrate by relating my own experience when testing for my own satisfaction the trustworthiness of correlation coefficients. If we select in random order 40 counters, shuffle them up and select them again in random order, it is clear that the theoretical correlation between the two series is zero. And, indeed, when I had worked out 45 such correlations and taken an average I found the correlation to be .007, which was reasonably accurate. The individual correlation coefficients, however, varied from .41 to -.35. To take the first coefficient calculated would have been misleading: it was quite wide of the mark. The probable error would not have saved me; for that again only tells us what is probable, not what is certain. It is only by repeated verification that certainty can be arrived at. Mr. Gordon would be the first to admit that his correlations, valuable as they are as indications of tendencies, need further verification before they can be accepted as established scientific truths.

It is to be observed that the scholastic tests used by Mr. Gordon differed from the ordinary examination in form. They were standardised and formed a delicate scale. Their technique was the technique of intelligence testing, and this brought the intelligence tests and the scholastic tests much closer together than they usually are. The reasonable inference to draw is not that intelligence tests should be discarded, but that improvement lies in two directions—in the adoption of intelligence tests as the most efficient instrument of mental diagnosis ; and in the improvement of ordinary examinations by applying to them the technique which has proved so successful in the testing of intelligence.

The reader who will carefully read Mr. Gordon's pamphlet in the impartial and critical spirit in which it was written will find his task both interesting and profitable. Mr. Gordon has rendered a service to the cause of mental testing by indicating some of its limitations. It is, however, an argument *ad clerum* and not *ad populum*.

P. B. BALLARD.

An Outline of Psychology.

By William McDougall, F.R.S., Professor of Psychology in Harvard College.
Pp. xii and 456. (Methuen and Co., Ltd. 12s. net.)

STUDENTS of education and, more particularly, those responsible for the direction of educational studies will welcome another book from the pen of the brilliant author of "Social Psychology." The present volume will be of peculiar interest for two reasons. In the first place, the views of the earlier work have proved of such service in the fields of education, medicine, and industry, that the author has been encouraged to develop further his central thesis of human behaviour as built upon a basis of innate tendencies essentially similar to the instinctive tendencies of animals. And, secondly, the present volume, declared by its author to be the best account of mental process and mental structure that he has been able to achieve by thirty years of strenuous study, is one which takes up an original and definite point of view as to the best *method* of setting about the study of mind. It is, therefore, not unfair, perhaps, to the book as a whole to consider its value for one class out of the many that will find enjoyment and instruction in perusing its pages.

It is a debatable question whether the first presentation of a subject on which widely divergent opinions are held should indicate, even at the risk of dogmatism, the peculiar views of the teacher, or whether it should proceed with caution and reserve to evaluate opposing points of view. Dr. McDougall's general treatment gives the impression that he wishes to point out to the student the chief alternative routes of psychological study, and he makes an honest effort to state in an introductory chapter the deficiencies of the main psychological theories—the doctrine of "faculties," the various "ways of ideas," the abstractions of "sensationism," and the rigidity of "reflex-mechanisms." The chapter, as the author anticipates, will probably not help the beginner in his initial wrestlings with a difficult subject, but it will be of service to those who have previously followed McDougall's advice to begin their psychological studies by reading James's "Principles." Such students, however, should surely be encouraged to compare Dr. McDougall's criticisms with the original views of some of the authors cited, and the chapter would have been of still greater value if careful references to the original expositions of these rival theories had been added to the half-dozen odd references (mainly to modern writers) that figure in the foot-notes.

It is doubtful, indeed, whether the beginner is given any real choice of alternative routes. The author, in his desire to escape the simplifications of mental phenomena which he rightly condemns in the theories of other writers, and in his determination to deal with concrete realities rather than mythological entities, is himself led into much the same errors of exposition. It is true that he sets out to build up a "description of the human mind by gathering all possible facts of human experience and behaviour, and by inferring from these the nature and structure of mind" (p. 35). He also reminds us, in the opening paragraphs of his book, that the psychologist "should study animals for the sake of the light which such study may throw upon his own problems, the problems of human nature" (p. 2). These statements seem to imply a fairly definite point of view as to the scope and method of psychology, but although the emphasis is placed on the *inference* of the nature and structure of mind from the study of *human* experience and behaviour McDougall's

general method seems to proceed from the *assumption* of the probability that "Mind has the same nature wherever and whenever it exists or manifests itself, whether in animals, men, or superhuman beings, whether in the new-born infant, the fool, or the wise man" (p. 35). Now, of course, if we take as the essential nature of mind what we find, or believe, to be common to the behaviour of protozoa, earthworms, moths, bees, solitary wasps, carrier-pigeons, mammals, man, (references to the inhabitants of Mars and even to the "constitution of the Angels" are not wanting in McDougall's pages), we may make out a good case for the essential sameness of mental activity all along the evolutionary line from the amoeba to man; but we do so by a process of simplification and abstraction that may be as unfair to the nature and structure of the human mind as the mythological absurdities that McDougall consigns to psychological museums. Students are at least as prone to confuse the *origins* of a mental function with its utility and place in the complex scheme of adult mental life, as they are liable to be misled by the natural tendency to reify the elements of psychological analysis. There is undoubtedly something to be gained by a perusal of Dr. McDougall's highly interesting survey of the behaviour of widely differing forms of life, but unless the reader is invited to make careful comparison of this behaviour with the rôle played by fundamental tendencies in his own experience, not only may his ideas be hazy, partial and inaccurate, but, worse than any of these faults, they may lack any inner standard of evaluation.

Apart, however, from an occasional insistence on the adherence of the general point of view with ordinary common-sense, there is practically no appeal to introspection in the two hundred and twenty-five pages devoted to the establishment of the thesis of instincts as the prime movers of human activity. No doubt introspection on such problems would be difficult for the student and not very easily fitted with the author's method of exposition in so far as it is intended to move from the simple instincts to the organisation of instincts into sentiments. But there seems little point in the author's eagerness to impress upon the student that the rôle played by this or that tendency in lower forms of life is exactly the same in the case of man. Thus, to take a single instance out of many, after a discussion of the behaviour of the natural man (a discussion which is really a sustained effort of the imagination), the reader is told: "And it is the same with ourselves—reasoning, like all other forms of intellectual process, is but the servant of the instinctive impulses; it does not prompt or impel us to action" (p. 215). When we turn to the section of the book avowedly devoted to the introspective method we find almost continual reference to the behaviour of animals, and, indeed, the author tells us explicitly that his aim in the second half of the volume is to extend and supplement the inferential account of the nature and structure of mind already given.

But the novel feature of the book as a whole is the development of the distinction between facts of mental structure and facts of functioning or activity. Here Dr. McDougall breaks new ground. He differentiates motor mechanisms from instincts and by so doing escapes to some extent the obvious lack of agreement of the functional facts of certain instincts with the famous definition of instinct formulated in the *Social Psychology*. The definition is still retained, but there is added a careful discussion of the varying degrees of specificity on the receptive and executive sides of

the instincts and of gradations of definiteness and distinctness in the concomitant emotional excitements. But the detailed description of specific instincts scarcely gives substantial support to the idea of instincts as "functional units of mental structure," nor does it always seem fair to the plain facts of human experience. Two different types of instinct, the parental or protective, and the assertive may be considered briefly in illustration of these points. Both of these are of first importance for the author's general position ; the first is stated to be the only real basis of altruism in the innate structure of the mind, and the second in conjunction with the instinct of submission, plays a dominant part in the formation of sentiments and the organisation of character.

McDougall's general discussion of the parental or protective impulse limits the operation of the instinct to the concrete situation of parenthood or to extensions of that situation that are easily understood. There is no mention of the "mothering" or "protective" attitude of a young child towards a member of its family, or a stranger, of still more tender years. Such behaviour is not so rare among children that it should pass unnoticed, but although in connection with the parental instinct there is explicit recognition of the extension of the response to objects other than the specific or natural object, the "explanation" of the extension as due to a "capacity of being affected by one aspect or feature of a complex whole in the same way as by the whole itself" is obviously beside the mark in dealing with this behaviour in children. Such behaviour is not explained by primitive passive sympathy : is it due to the "blended emotion" of pity, or the "sentiment" of love ? If so, how are we to suppose the tender impulse of the protective instinct to have become functional in the life of McDougall's lonely recluse ? (p. 421). Either the protective impulse is not one and the same unit of structure with "Nature's brightest and most beautiful invention," or the description given of the mode of excitation of the parental instinct must be modified. And the reasons given (p. 140) for denying combative behaviour to be one of the expressions of this instinct seem to me to be substantially valid against the inclusion of the protective impulse under the rubric of the parental instinct as it is described in the author's pages.

Again, in the treatment of self-assertion the operation of the impulse is limited to a social environment : apparently the assertion of the self against physical obstacles is not a true exemplification of the impulse or else it is to be explained by some form of organisation of the impulse into a sentiment or series of sentiments. But the child's reaction to "things" (as the term is used by Rousseau) is an important factor in development and seems to be treated in rather stepmotherly fashion by McDougall. Thus (p. 427) : "Gradually he (the child) learns his own capacities and limitations in relation to things, to animals, and to persons" But how, exactly, is the transition from persons to things effected, if the instinct is essentially and primarily a social impulse ? The child's "See me do this" (the example of self-assertion given in the "Social Psychology," p. 63), presupposes an act of successful self-assertion against an obstacle ; the factor of self-display and the feeling of elation seem plainly to be of secondary importance in the situation as a whole. The activities of the Montessori school give substantial evidence of the operation of self-assertion against "things" and rather discount the idea of self-display as the primary factor in really educative situations.

Apart, however, from the adequacy of the descriptive accounts of the instincts there are difficulties with regard to the independence of some of the structures. McDougall shows, for example, a certain hesitancy in accepting the assertive and submissive tendencies as units of structure comparable to the other instincts. He explicitly acknowledges the difficulty of differentiating the assertive from the mating impulse and agrees that "in all social situations the assertive and the submissive impulses are constantly at work complicating the behaviour of the pairing instinct" (p. 160). Later he insists that the "self-assertive impulse is unique in that it is a motive of universal applicability" (p. 445). This seems to suggest that self-assertion is a structure that supports other structures rather than one that merely exists alongside of others—a view that is somewhat similar to Professor Nunn's conception of life as the unrolling of a continuous process of self-assertion in which the activities of the special instincts are only characteristic moments. (Cf. "Education: Its Data and First Principles," p. 138.) But it does not seem true to the present writer that the *self*-submissive impulse (McDougall for some unexplained reason prefers the term "submissive" in his latest work, although he still retains the prefix in speaking of assertive acts) functions only in situations where negative self-feeling is prominent, or, in other words, self-assertion is baffled or inhibited. It seems rather to stand for that receptive attitude towards experience that leads to, and makes possible, the organisation of instincts into sentiments and into still more complex structures. It is, in other words, a structure, of the generality of self-assertion, in which such tendencies as "imitation," "suggestion," and some forms of "play" are characteristic, but not the only, features. Professor McDougall protests against the "lumping together" of groups of tendencies that subserve the same general biological function, but his own treatment, notwithstanding all the brilliance and wealth of his argument, does not appear to go much further than a rough sketch of a number of structures useful as a starting point for future research. Until the evidence for unitary structures is substantiated by a more careful adherence to *psychological* considerations, the use of group-names for such tendencies may be at least as useful in indicating lines of investigation as names which appear more precise because they are a result of a simplified view of life.

The latter part of the book will be particularly helpful to students of education, although, perhaps, a fuller discussion of rival views on the primacy of cognition, conation, or feeling might leave such students free to make up their own minds on a question that is likely to influence powerfully their general attitude to the child's mental growth. The study of the development of "meaning," of the relations of attention and interest, of the significance to be attached to the results of experiment on "memory" are so clear and illuminating that one may safely prophesy that Professor McDougall's book will soon occupy a prominent place among the few to be read, marked, and inwardly digested. And the references to a forthcoming volume on the abnormal aspects of mental activity are sufficient to bring into play the "primary anticipatory function of mind," if not the primary investigatory structure of curiosity.

W. J. M'CALLISTER.

The Reform of Education.

By Giovanni Gentile. Authorized translation by Dino Bigongiari, with an Introduction by Benedetto Croce. (Benn Brothers, Ltd. 8s. 6d. net.)

THIS book contains a series of lectures to teachers which Gentile delivered at Trieste four years ago. It gives a lucid, connected, and relatively (but only relatively) simple exposition of his philosophy of education. There are many eloquent passages in which felicity of illustration, depth of conviction, an ardent love for the school, a vivid sense of the teacher's responsibility, an apostolic fervour for humanity combine to carry the reader along where the inherent difficulty of the thought, had it been formally or technically expressed, might have acted as a deterrent. A stimulating and inspiring book, it is also provocative; for its ideas run right athwart some of the fundamental assumptions of theories of education current in Italy and elsewhere at the present time. Whether these ideas are accepted or not, they cannot fail to arouse those who ponder them to a fresh examination of what has been taken for granted or accepted without adequate reflection. They have a further interest. Since they were first expressed, the philosopher has become the statesman entrusted with the task of recasting a national system of education. It is natural to expect that his philosophy will be reflected in the transformation which is taking place.

"The belief that men may continue to educate without bothering with the subtle problems of philosophy means," says Gentile, "a failure to understand the precise nature of education" (p. 223). These problems, in evidence throughout the book, are discussed directly in the chapters on the Spirituality of Culture (Chapter V) and the Attributes of Culture (Chapter VI). The underlying thought is that Spirit is the sole reality; that the concept of culture is identical with that of Spirit or Personality; that, since education becomes actual by culture, to determine the nature of Spirit is to acquire a thorough understanding of the principles of education.

What, then, is the nature of Spirit as Gentile conceives it? Spirit is the whole; men, animals, plants, inanimate nature are all within Spirit, which is essentially thinking activity—intellect and will in indissoluble unity. The ultimate characteristic of the concrete life of Spirit is self-consciousness. Since Spirit is creative process, this self-consciousness is not achieved once for all; it is being realised continuously and progressively in the lives of human beings. Nothing in the life of Spirit is finished or complete or predetermined. "Man becomes man"; and this becoming is autonomous and at the same time moral. He is the centre of all things; "The world . . . is in us; it is our world, and it lives in the Spirit. It lives the very life of that Person which we strive to realise, sometimes satisfied with our work, but oftener unsatisfied and restless. And there is the life of culture." Culture, then, as life of the Spirit, is autonomous becoming, the formation of personality, the realisation of self-consciousness. Far from being a static possession, it has no existence except in the act by which it is realised in determinate forms that are ever new. It is therefore "effort and work"—"a life which

we live feeling all along that it is our duty to live it, and that it depends on us whether it exists or not" (p. 137). The reform of education consists in a firm grasp of this conception of the spirituality of culture.

It bids us, for example, look beyond what is empirical and particular in each person, the source of error and sin, to that other aspect of personality which lies deeper and is universal. Thinking only of the first, "we may fail to grasp that part which reveals all that is spiritual, and human, and truly and peculiarly ours." The teacher must strive to escape from the limitations of a narrow egoism, and remember that his business in school is to represent the universal in its historical determinations. "Scientific thought, customs, laws, religious beliefs, are brought before the pupil's mind, not as the science, the laws, the religion of the teacher, but as those of humanity, of his country, of his period." But if the teacher acts on the mind of the learner to enable him to realise the universal and surmount the obstacles in his path, is not this an act of authority tending to destroy the learner's spiritual autonomy? What then becomes of the freedom of the pupil which is presupposed and which education must strive to increase? This is the problem of freedom and authority, the "fundamental antinomy of education." (Chapter II.)

Freedom means that "man derives from no one but himself the principles and the causes of his actions." To solve the antinomy we must fix our gaze on the freedom of the universal Spirit determining itself in teacher and learner alike. This larger freedom is posited by education. In every truly educative act there is unity of spiritual process in which the apparent dualism of teacher and taught vanishes. The teacher, for example, reading a poem aloud, is within the soul of his pupil as an object of consciousness, and the pupil really learning is living and creating for himself the poem, until it becomes within the measure of his ability his own poem—a different poem it may be for every member of the class. The limitation of the freedom of the pupil by the authority of the teacher is only apparent. The real teacher is "the pupil himself in the dynamism of his development. So that, far from limiting the autonomy of the disciple, the master, as the propulsive element of the pupil's spontaneity, penetrates his personality not to suppress it, but to help its impulses and facilitate its infinite development" (p. 63). Negative education, which forswears authority, is a "vague and unrealisable ideal." (Chapter III.)

In Chapters IV and VII Gentile joins issue with realism, to which he attributes many of the most serious defects in education. "The faith of the modern man," he asserts, "cleaves to a life conceived and directed idealistically," convinced that this life is freely created by Thought, which extends its sway over nature, penetrating and spiritualising it. Thought has this power because Nature "yields readily to its will, not being *per se* opposed or repugnant to the life and activity of the spirit, but rather homogeneous and identical with it." Opposed to this form of faith is realism, which is defined as "that manner of thinking which makes all reality consist in an external existence, abstract and separate from thought, and makes real knowledge consist in the conforming of our ideas to external things." In culture it is the assumption that there is no nourishment for man's spirit which does not come from the outside and exist before it is assimilated. It is that which so often

makes methods of teaching, dictionaries, text-books, grammars, the set composition, lay the hand of death on the creative activity of Spirit ; for these are all abstractions from the processes of thought which generated them, and are on the same plane with external things to which the mind must conform. The realistic attitude of mind is found whenever knowledge is felt to be the antecedent of culture ; and to this type of thought the teacher is especially prone. He submits himself to a method as if a method could be found and fixed once for all. The knowledge he has acquired and imparts tends to become an immutable possession which, in the process of learning, can be duplicated in its integrity in the learner's mind. So culture is materialised, devitalised ; mind is submerged in its object. But there are no fixed methods, no fixed knowledge. Methods and knowledge exist only in the creative activity of Spirit, and as living process are always new. Science in its historical progress is marked by " errors, vicissitudes, and crises," and the teacher must get back to the point of view that " science as culture, as personality, is free, perennially becoming, stirred by ethical impulses, multiple, varied." Such it should be in himself and in the pupil as he learns it.

The application of Gentile's conception of Spirit culminates in his discussions of the unity of education (Chapter VIII), character and physical education (Chapter IX), and the ideal of education (Chapter X).

" We must learn to loathe the scrappiness of education. . . . Unity ought to be our constant aim." The lack of unity is evident in Italian text-books on education with their separate treatment of intellectual, moral, and physical education, each in turn split into many sub-divisions ; it is seen again in schools with their numerous subjects and specialist teachers. That these heterogeneous elements will of themselves combine to form a harmonious whole is assumed rather than proved. But the concept of Spirit offers a real principle of unity. The empirical separation of the teacher's ability as disciplinarian from his skill in instruction rests on the assumption that will is one thing, and intellect another. If, as Gentile believes, thought is continuous self-creation of personality, this assumption falls to the ground. " Personality in act is absolute unity." Instruction that is not at the same time moral training is not even instruction. The view of the three R's which regarded them as only instrumental missed their significance for the shaping of character. And the like result follows whenever intellectual instruction is abstract, failing to reach the vital centre, the concrete life of spirit, ethical and free. (Chapter VIII.)

Physical education, Gentile maintains, is spiritual education, for the reason that body is Spirit. Its aim is " to turn the body into an obedient tool of the will." The individual body is inherited ; it is one of the determinate forms in which Spirit has expressed itself in that infinite process which is the history of body (and of nature). As such it is a limitation upon the freedom of the individual man, though not upon Spirit in its universality. This natural body is the first object of consciousness, and is felt vaguely as one and infinite. From the very beginning Spirit—the " larger man " within the " smaller man," the universal particularising itself in the individual—animates, sustains and transforms it. Thus our limbs become what we want them to be, " to the extent that their being depends from their functions, and their

functions can be regulated by hygiene and exercise, which are our action and our will." Every part of the body as it becomes an effective instrument of the will is a product of spiritual activity ; in making the body we make ourselves. Here the meaning of body takes a wider sweep ; for the body is the centre of our experience of other bodies. Through it the Spirit reaches out to the very confines of nature, dominating and subduing it in restless unceasing effort to realise itself. As Gentile has said elsewhere, "in this body which we use and with which we who are personality will spiritual activity, invest the world, inserting ourselves in nature and gradually transforming it in order to actualise it within our own spiritual ends, we have the basis of all our thoughts, of all our feelings."¹ So body spiritualised comes to include all the achievements of the "thinking and willing man," and in this sense body is the seat of personality. In this sense, too, the statement is intelligible that "the character of man is in the object" (what has been thought or created by the individual as opposed to his thinking activity which is continual change), "in the contents of his thought, in what he gradually builds himself up to, in the determined personality which he constitutes by thinking, or in other words, *in his body.*" Character is not simply physical robustness, which, it is said, enters into it only so far as it is spiritual health, and is "compact, firm, steadfast thought." Physical training in the narrower sense is but one of the ways in which character is formed. It is imperative that the teacher responsible for it should possess enough culture to discern the spirit behind the body as we perceive it ; "he too is training souls, and collaborates with all the other teachers in the moral preparation and advancement of mankind." (Chapter IX.)

The ideal of education is immanent in the nature of Spirit. There are two determinations of the content of education corresponding to a twofold content of Spirit. As a process the life of Spirit is historical ; it is continuous creative activity in which every moment is new and nothing can be predicted. So it is useless to discuss abstractly either the content of education in general or of that of any particular school. "Away with pre-established programmes then of any description ! Spiritual activity works only in the plenitude of freedom." But spirit in all its historical determinations has forms which never vary. These "immortal forms" are created by the eternal life of Spirit in that dialectic by which the subject posits itself as an object (men and things in their multiplicity) and unifies subject and object in self-consciousness. Lacking any one of these forms "spiritual reality would cease to be. This threefold realisation admits empirically of a separation that makes it possible to have one without the others. On the strength of this triple division we speak of art, of religion, and of philosophy." Gentile holds that a work of art is an expression of the artist's world, a subjective creation, and that art is "the self-realisation of the spirit as subject" ; in religion, on the other hand, the subject has no value over against the object of its worship—the Saint, it is said, as contrasted with the artist who exalts his abstract individuality, "crushes and annihilates this same individuality in the face of his God." But however much at times the balance may be disturbed, the separation between art and religion, between the

¹ *L'Educazione Nazionale*, Anno V-N. 5-6, p. 3.

subjective and the objective phases of the Spirit's life, is never complete. "Art which is not religion and religion which is not art are two impossibilities." Both are unified concretely in philosophy. In this sense philosophy is the life of Spirit, or simply Spirit, and this is the ideal which education must strive to realise. The forms of the Spirit will be present in every educative act so that it is at once æsthetic, religious, and philosophical. There remain the sciences. Science is akin to religion in so far as man, as subject, disappears before the object, Nature. But the particular sciences, though "cut off from the centre of Spirit," refer to it. "And because they do refer to it, the teaching of them should be spiritualised, moralised, humanised; it ought to acquire the concreteness of philosophy, and therefore never ignore the exigencies of art and of religion."

I have ventured to give, largely in Gentile's own words and without comment, an analysis of this remarkable, but difficult, book, in the hope that it may be serviceable as a preliminary survey for those to whom the order of ideas is unfamiliar. On the importance of Gentile's thought as a speculative construction there is no need to insist. A consideration of its bearing on educational theory and practice is reserved for a future occasion.

A. J. MONAHAN.

Book Reviews.

Studies in Mental Deviations : by S. D. Porteus. (Published by the Training School of Vineland, N.J., Department of Research. pp. xi + 276.)

Most of us are acquainted with Professor Porteus mainly as the originator of the Porteus Maze Tests. In this book the reader will become familiar with him as a very wise and careful investigator of mental defect, combining fertility of devices for psychological research with common-sense and that wider knowledge of men and affairs which is a check on the crudities of many investigations of narrow scope.

The book deals with general Aims and Methods, Anthropometric studies comprising normal brain capacity, brain capacity and mental deviations, brain capacity and heredity, physical and psychophysical development ; with the Porteus maze tests ; personality traits—principles of social rating scale, selection and weighing of traits, application of social rating scale, and relation of scale to mental tests. These are followed by detailed studies of various individual cases and the further discussion of intelligence tests and an industrial rating scale.

Of particular interest to us is the social rating scale. Professor Porteus is fully alive to the fact that certain qualities may be of use in a normal or genius and yet actually harmful in a defective. With this social rating the author attributes his success to five things —

- i. Limitation of the application of the scale to the sub-social so that the scale is one for rating social inefficiency rather than social efficiency.
- ii. Limitation of the application of the scale to defective social inefficient.
- iii. Confining the selection of the traits to be judged to *defects*.
- iv. Limitation of the number of the traits to be rated to those which are most important and most characteristic of defectives.
- v. Choice of judges of long and intimate acquaintance with the subjects.

One criticism, I think, must be suggested, namely, that some of the " qualities " seem to be incompletely analysed. C. W. V.

A Sunday School in Utopia : by Rev. E. F. Braley, M.A., LL.M.

(Macmillan and Co., London. 229 pp. 5s. net.)

The writer of this little book is an enthusiast for the Reformed Sunday School, and certainly has a very high ideal of the real function of Sunday Schools. The book is divided into three sections : Psychology and Pedagogy respectively form two of these ; the third part is a short appendix, containing the apparently inevitable, short, superficial chapter on Psycho-Analysis. Of the three sections, probably the second is the most valuable.

In the hands of a really capable leader, who could correct inaccuracies, eliminate inconsistencies, formulate more precisely and definitely psychological principles, and suggest more appropriate pedagogical application of these principles, the book might be of service in Teachers' Preparation Classes.

A careful reading of the book leaves one very doubtful if the author's way is the true way towards the realisation of his own highest aspirations for the Sunday School. E.C.C.

An Outline of Psychology for Educators : by A. J. D. Lothian, M.A.

(London, G. Bell and Sons. 200 pp. 5s. net.)

The Principal Lecturer on Psychology to the Edinburgh Provincial Committee for the Training of Teachers has here given to a wider audience the substance of his lectures to his students. He has aimed at brevity, and has really given us a primer on McDougall's Psychology, together with an interesting selection of some simple experiments that students might be expected to perform. He has certainly succeeded in achieving one of his aims, viz., " to exact some effort from his readers," for the book is not an easy one to read, consequent upon the brief nature of the treatment allowed to each subject. The author has managed to include thirty chapters within the 200 page compass of the book. As a brief introduction to Psychology for Educators the volume has value, but one wonders if there is a real need for such a book. One feels, though, that McDougall might be allowed to speak for himself, and that the author might have given us a very useful book indeed if he had developed the experimental work more fully. E.C.C.

Psychology and Morals : by J. A. Hadfield.

(Methuen and Co. pp. 181. 6s. net.)

This book is based upon lectures delivered as the Dale's Lectures at Mansfield College, Oxford, in 1920. The point of view is that of a psycho-analyst who holds something both of the doctrine of Freud and of Jung. The scope of the book, whilst largely psychological, includes the border line of psychology and ethics, discussing, for example, the distinction between nervous disorders, moral diseases and deliberate, conscious and "responsible sins." Dr. Hadfield makes many suggestive contributions to these topics and the book is marked, on the whole, by moderation, if one compares it with some of the works of psycho-analysts. Nevertheless the author seems to us to make, without anything approaching proof, a large number of assertions of considerable importance, and frequently there seems to be the assumption of a given quantum of emotion of a certain type. Nor is Dr. Hadfield clear on the question of sublimation or as to what exactly is meant by "accepting" the repugnant impulses and passions, which, it is held, is necessary before they can be controlled.

Conflict and Dream : by W. H. R. Rivers, M.D., D.Sc., F.R.S.

(Kegan Paul, Trench, Trubner and Co., Ltd. pp. xi. + 194. 12s. 6d.)

In this book the late Dr. Rivers elaborated his theory of dreams as a means of the solution of conflicts in the present-day life of the dreamer. He gives a criticism of Freud's theory and uses as material for his thesis a good many dreams of his own, which are analysed in detail. The affect in the dream, Dr. Rivers thinks, depends upon the extent to which the dream affords a satisfactory conclusion or fails to do so. It is undoubtedly possible to show that many dreams fit in with Dr. Rivers' view of a dream as a solution of conflicts. It does not seem to me to differ so much from the Freudian view as the writer maintains, for the repressed wish which Freud postulates, or used to postulate, as the cause of dreams, implies a conflict with the impulse which caused the repression. Undoubtedly many dreams can be made to fit in with the view here expounded, but, judging from my own observation, there are many and even a majority of dreams, which seem simply to be a completion of mental processes which have been suspended or interrupted without anything in the nature of serious repression or conflict.

It is hardly necessary to say that the book is marked by a clarity and a thoroughness which characterises all the writings of the late Dr. Rivers, and that it forms a very valuable addition to the subject.

C.W.V.

Story-Making : by Rosa Waugh Hobhouse.

(Methuen. 167 pages. 3s. 6d.)

Miss Hobhouse writes from a wide experience of story-telling to play-centre groups and other audiences. She has an unusual gift for composing the most delightful stories on demand, and she hopes by means of this little book to awaken latent talents in others and to inspire them to similar creative effort.

Her twenty original tales in outline are charming, and one would like to have been present at the telling. It is to be regretted that some, at least, were not given in full. By cutting them down to mere outlines the author sacrifices her joy in her own creations, and at the same time deprives the reader of the inspiration to be gained from the writer's style.

The chapters of instruction on story-making will, however, only appeal to a limited public. Most adults are, happily perhaps for the children, only too conscious of their lack of talent, to aspire to original creation; and all who have any memory of the poor material that has, in the past, been offered to children, in the guise of original stories and original poetry, will fear any attempt to encourage the story teller to become the story-maker.

The best advice that can be given to teachers and other prospective story-tellers is to saturate themselves in the works of the great story-makers. Life is not too long to collect a repertoire.

As the actor is to the dramatist, and the performer to the composer, so is the story-teller to the writer. His part is that of appreciation and faithful interpretation. To few is it given to fill both spheres, but in such cases one trusts that genius will discover itself.

L.E.S.

Botany : a Junior Book for Schools : by R. H. Yapp, M.A.
 (Cambridge University Press. Pp. 199. 3s. 6d. net.)

The object of this book is to provide an introductory course for students and it is planned on what seem to us thoroughly sound lines. Throughout, the descriptions of structure are accompanied by a discussion of function and the experimental method is freely used. The drawings are admirable, nearly all of them being taken direct from the specimens as they occur in Nature. The chapters are accompanied by hints for practical work and from every point of view the book seems an admirable introduction to the study of Botany. It is really surprising to note the amount of information which the author has managed to pack into 200 short pages. We can confidently recommend it as a book for students beginning the study of Botany.

Modern Script for Schools : by T. E. Raw.

78 pp. (Harrap. 7s. 6d.)

This book is a welcome justification of "Script" writing, not merely as an easy method of combining reading and writing in the Infant School, nor yet as an art for older scholars, but as a means for restoring to handwriting its lost qualities of beauty and legibility, at the same time not striving for mere uniformity, but encouraging individuality.

It is a well-graded course, starting with the bare script of the Infant School and giving valuable help in the development of this into a cursive, individual style. It has fifteen well-chosen illustrative plates. The book should be in the hands of all teachers, and will do much to establish order and continuity, instead of the present lack of system, in the teaching of handwriting.

L.E.S.

A Smaller Commercial Geography : by G. G. Chisholm.

(Longmans and Co.). 302 pp.

The preface describes this book as a text-book, presumably intended for students of commerce. As a condensed "enquire within" on the articles of world commerce it is admirable. No article of importance, or unimportance, is omitted, from alkali to zinc. Every country is dealt with from vast Russia to the smallest Pacific island that is worth exploiting. In addition there are condensed accounts of such general themes as climatic zones and their products, transport, and trade routes. As a text-book intended for rational study it preserves the old method—a thoroughly bad one—of presenting geography as a maximum of detailed facts with a minimum of reasoned treatment. Surely the time has arrived for some economic geographer of generous culture to set forth a broad and reasoned treatment of the main basic themes of commercial geography into which facts and details will fit in a rational way. To the understanding of the world—even the world of commerce—broad vision, intelligent judgment and rational appreciation are of more value than a mere infinity of facts. The mind should not be dealt with as if it were to be a dictionary or encyclopædia.

There are no maps—not one—nor a single graph, or graphic mode of showing comparative statistics—a deplorable omission. The normal mind thinks about space and distribution in space by the help of spatial images, *i.e.*, "map images." A map is part—and an essential part—of geographic thought. We cannot think definitely or economically about places and distribution of products in space in an other way. We look to the authors of geographic text-books to give us specially designed maps to facilitate our thought. In this book we look in vain. We can only use it without irritation by calling in the help of a good commercial atlas.

As a book for the student to learn from it does not meet with our sympathy. We place it on our shelves with a sigh—or is it a yawn?—of relief. We respect it, as we respect our dictionary, as a laborious compilation and a worthy book of reference. We will use it as occasion demands; but we will not study economic geography from it. We have too much respect for human culture, even of the commercial kind.

W.P.W.

Heath's New Practical French Grammar : by W. H. Fraser and H. Squair, with new exercises in Part I, by H. Coleman. (D. C. Heath and Co. pp. v. + 564. 5s.)

This is an unusually comprehensive book, the first part being adapted to the needs of the beginner and following some modern ideas as to method and arrangement. Part II is more advanced, and forms a useful grammar for reference. Taken as a whole the book is particularly suitable for older students who begin French late and who want a fairly thorough but elementary treatment, and at the same time a good reference book in one volume.

Virgil and his Meaning to the World of To-day : by J. W. Mackail (formerly Professor of Poetry in the University of Oxford). 159 pp. (Harrap. 5s.) This volume is the fifteenth—the fourth actually published—in an admirably planned American series ("Our Debt to Greece and Rome"), which includes some works by foreign scholars. The editors explain its purpose as being "to trace the influence and clarify the significance of Greek and Roman thought and culture in their relation to our own time." For Virgil probably no living scholar could have performed this task with more skill and charm than Mr. Mackail. The standard of English work on Virgil set by Conington and Sellar and Myers—not to mention the great name of Dryden—is very high. Mr. Mackail worthily maintains the tradition. His book will be read with pleasure both by the classical scholar and by the general literary student. There are masterly little sketches of Roman literature and of Virgil's Age, "one of the main turning points in history." The Life is illuminating without too rash a use of recent work on the Appendix Vergiliana. The literary criticism is full of interesting points of view and often exquisite. The tenth Eclogue is "the fountain-head of romanticism for mediæval and modern Europe": the Georgics were composed by a "slow distillation": "perhaps no poetry has ever been written which combines in such perfection richness of colour with purity of line, which is so exquisite in its transitions and so suave in its modulations, so smoothly gliding and so nobly sustained. All these qualities are reinforced or culminate in the episodes, where the current of the poem spreads into large pools of beauty." There follows a penetrating study of the elaborate process by which Virgil wove many strands or leading motives into the complex texture of the *Aeneid*. The epic is "an organic unity and a masterpiece of original creative art," different in all essentials from Homer. "Dido is perhaps Virgil's greatest creation"—to the damage, no doubt, of *Aeneas*. "In no other poetry are the chords of human sympathy so delicately touched, its tones so subtly interfused. In none is there so deep a sense of the beauty and sorrow of life, of keen remembrance and shadowy hope, and, enfolding all, of infinite pity." A chapter is devoted to Virgil in the mediæval and modern world. "The great Italian poets, under whose influence English poetry ceased to be insular and took its place fully in the European Republic of Letters, were in a sense but the channel through which the Virgilian inspiration flowed." Modern English poetry may be said to begin with Surrey, who in his translation practically created English blank verse. For the present generation the significance of Virgil is deeper than ever. "We stand now, as Virgil stood, among the wreckage of a world; he can give light and guidance to us in the foundation of a new world among its ruins. Mankind is, above all, human; what it above all needs, not in education only but in the whole conduct of life is humanism; consciousness of its own past, faith in its own future, the sense of truth, beauty, joy." There is a short appendix of notes and a bibliography useful for recent American literature.

J.O.T.

An Introduction to Projective Geometry : by R. M. Winger, Ph.D.

(xiv. + 443. Harrap and Co. 12s. 6d. net).

The author justly describes this carefully arranged course as an Introduction. It really is an introduction. Dr. Winger has his own views about the beginnings of Projective Geometry, and the use of Binary Forms, he is keen on Cubic Involutions, and can write a good chapter on Non-Euclidean Geometry, but he is first a teacher and as soon as his students can take up the stiffer pace he just points the way to the masters.

The exercises are exceptionally numerous for a book of this character.

Any criticism on the score of discursiveness may be met by the reply that the discursiveness is only apparent, followed by the comment that this same characteristic makes the book singularly useful to teachers of mathematics, who feel that recent research involves a modified attitude towards classical geometry.

H.E.J.C.

The Companion Classics : Twelfth Night, with a commentary by K. N. Bell, M.A., and E. G. Francis, B.A., and acting notes; and The Tempest, with a commentary by Lloyd Storr-Best, D.Litt., M.A., and acting notes. (Christophers. 1s. 4d. net.)

We welcome two further books in this admirable edition, and we may congratulate the publishers on the way in which they have fulfilled the difficult task of finding suitable successors to the late Professor Green, in carrying out his original and valuable plan.

Relativity and Gravitation : by Professor T. P. Nunn, M.A., D.Sc.

(University of London Press. pp. 162. 6s. net.)

The publication of "The Mathematical Theory of Relativity" is an event in the history of mathematics in this country, but few are fortunate enough to include in their classes even a small minority able to use Eddington's weapons. At the other end the efforts of journalists are futile for the serious student, and there is an increasing demand for an exposition of the elements of relativity fitted to the capacity of an ordinary intelligence competent to deal with mathematical formulæ. Professor Nunn, as was expected of him, has attempted to meet this demand. In this book he tries to show how Einstein, guided by Newton's Law of Gravitation, was led to modify the formula for the Galilean space-time interval. Professor Nunn takes his students step by step through the famous paper in the *Annalen der Physik*, denying all opportunities for originality, and using all his skill to make a path suited to the stride of an ordinary B.Sc. candidate. For this purpose he bases his initial presentation upon the idea of geodesic motion, reserving the beautiful tensor calculus until after the "eclipse," the "perihelion" and the "spectrum" phenomena have been investigated.

The influence of Whitehead's philosophy is obvious throughout the book, although explicit references are brief. The problems of the curvature of empty space and of the electro-magnetic field are definitely omitted.

The only adverse comment that occurs to us concerns the sudden introduction in Chapter VIII of the formula for the Newtonian potential at a point upon the axis of a circular disc. The addition of a few pages to the chapter entitled "Some Mathematical Notes" would have been sufficient to establish this formula upon Newton's Law of Gravitation. The whole book is such a good example of the art of teaching mathematics by the careful gradation of difficulties that the assumption of a knowledge of this particular formula comes as a shock.

But no criticism of details affects the important fact that at present, so far as we are aware, this is the only book on relativity which is suitable for the student who is anxious to get to grips with relativity, ready for hard work, but quite aware that he has only an ordinary mind.

H. E. J. C.

The Teaching of Geography : by W. P. Welpton.

(159 pp. Univ. Tutorial Press. 3s. 6d.)

The writer presents clearly in this book the problem of adapting Geography to the natures and needs of the pupils. He criticises those who teach subjects not pupils, a criticism which is especially necessary for students who have specialised in a subject because of its intrinsic appeal to them. He shows that from the point of view of the educator the scientific aspect must be secondary to the human, and that both must be presented in ways which will stimulate intelligent curiosity and independent enquiry by the pupils who thereby can gain real live knowledge not dead.

Practicable courses are suggested; a careful study of these will stimulate the reader to compare the different methods of approach and development and should aid the teacher in drawing up schemes of work.

Though the writer professes to discuss only the principles of the teaching there will be found throughout the book sections and hints on many practical details that should prove of value not only to the student in training but also to the older teacher who wishes to escape or avoid mere self-repetition.

The book contains in addition maps typical of many that can be made by pupils as summaries of important points, examples of outline verbal summaries, and two bibliographies, one for the teacher, at the end of the book, and one, p. 79, illustrative of realistic literature suitable for the school library. There is however no index.

A.E.C.

English Citizenship : by F. Swann.

(272 pp. Longmans, Green and Co. 3s. 6d.)

This is a revised and enlarged edition of a "Primer of English Citizenship," published in 1913, the revision having become necessary through the changes in our national institutions since 1913, and the enlargement having become desirable owing to the discovery by the author that the book was being read by more mature students than was anticipated.

The new edition should also appeal to teachers in primary schools who require information in a condensed form from which to select material for courses in Civics. Students in training colleges can profitably use it in conjunction with lectures or reading on social philosophy.

A.E.C.

The Social and Political Ideas of some Great Mediæval Thinkers : edited by F. J. C. Hearnshaw. (Pp. 224. Harrap. 10s. 6d.)

This is the second series of lectures upon mediæval contributions to civilisation, edited by Professor Hearnshaw. The topics and authors in the present volume are : Mediæval Political Thought (E. Barker) ; S. Augustine (Editor and Rev. A. J. Carlyle) ; John of Salisbury (E. F. Jacob) ; S. Thomas Aquinas (Rev. F. Aveling) ; Dante (E. Sharwood Smith) ; Pierre du Bois (Miss E. Power) ; Marsilio (J. W. Allen) and Wycliffe (Editor).

The essays should appeal to the growing body of citizens who are eager to know more than the ordinary historical text-book offers concerning the great thinkers who have contributed to the moulding of our social and political ideas and institutions ; teachers of history will find much of interest and value in the several contributions, and students of the history of education will be tempted by the essay on Pierre du Bois to read for themselves his contributions to educational thought.

The Middle Ages were largely inarticulate, as Professor Hearnshaw points out, with the result that it is difficult for us to realise the ideas and beliefs which dominated men's minds then and the extent of their contributions to civilisation. If the historian is grateful to the few who committed to parchment their theories and comments, students and teachers of history must be grateful to the editor and his colleagues for "heightening the contrast between essentials and unessentials," and thus helping them to realise the meaning and value of mediæval thought.

Each essay is followed by a useful Bibliography.

A.E.C.

World Geography and World Problems : by J. E. Unstead.

(280 pp. Sidgwick and Jackson, Ltd. 4s.)

This is the third of a series of four volumes written "to provide a complete and systematic course in geography reaching matriculation standard."

The first part of this volume deals with Africa, Asia, Australasia and North and South America in a descriptive manner, emphasizing the relation between manner of life in the various regions and natural conditions.

The second part is devoted to a systematic account of climate, the nature and distribution of natural regions, and a summary account of some world problems.

The book would be improved by the addition of short bibliographies including books of travel and fiction as was proved by the request for information on this point from a youth to whom the Review copy was lent.

A.E.C.

Types of Elementary Teaching and Learning : by Samuel Chester Parker.

(Ginn and Co. 585 pp. 10s. 6d.)

In this voluminous book the Professor of Educational Methods in the University of Chicago has given an account of some of the methods used in many progressive American schools, and, what is much more important, has indicated very carefully the scientific evidence upon which these methods are based. The various types of learning are examined and subjected to thorough analysis ; the methods of scientific measurement that have been perfected in recent years are carefully described and their applications indicated and discussed, sometimes with meticulous exactitude.

The book is extremely well produced and is provided with excellent references to original sources.

Many teachers on this side of the Atlantic will not agree with much that is here reported, and many more will have grave doubts as to the real value of much of the elaborate measurement here described. But it might be advisable that we should consider our own practice in the light of the researches so thoroughly and carefully carried out.

But why do so many American educational writers expand their books so unnecessarily by mere repetition ?

E.C.C.

Silent Reading : A Study of Various Types : by Charles H. Judd and Guy T. Buswell. (Educational Monographs, No. 23.) (University of Chicago. pp. xiv + 150. \$1.50.)

A full record of a very thorough investigation as to the variation of eye movements in reading passages of different degrees of difficulty and style (prose, verse, mathematics, and foreign languages). The work constitutes a valuable contribution to the study of the reading process. It is particularly useful to have the detailed study of individual cases with different materials.

C.W.V.

BOOK REVIEWS

Measuring the Results of Teaching : by Walter Scott Munroe, Ph.D.

(Harrap. pp. 297. 7s. 6d. net.)

This book is intended to serve as an introduction for teachers to the use of various kinds of standardised educational tests, with a view especially to helping the teacher who has had no special training in methods of educational measurement. Hence considerable attention is rightly given to the interpretation of results. At the same time the book has its practical side ; the writer discusses methods of correcting particular weaknesses revealed by the tests. It will be seen that the book fills a niche hitherto unoccupied, and it should serve to interest many practical teachers in the attempt to obtain a more exact measurement of educational attainments. Chapters are included on the measurement of ability in reading, arithmetic, spelling, handwriting, language, geography, and history.

C.W.V.

Elements of Economics : by Ernest F. Row.

(Harrap and Co. pp. 136. 1s. 6d.)

First Lessons in Logic : by Dorothy F. Waite and Ernest F. Row.

(Harrap and Co. pp. 152. 2s.)

Mr. E. F. Row has already proved himself possessed of a most unusual capacity for writing on the difficult questions of economics in an extremely clear and simple manner and making such topics, within certain limits, comprehensible even to the "average" pupil in the upper parts of elementary schools and secondary schools. In these two books he has shown still further this capacity. The "Elements of Economics" has a rather less elementary treatment than that given in his earlier book, "Work, Wealth, and Wages." The book would be eminently suitable for the senior classes of secondary and continuation schools, or as an introductory text book for W.E.A. classes or Training Colleges.

We are glad to see also a further attempt to introduce the study of logic into the schools, and this excellent introductory primer would be worthy not only of senior school pupils, but of students in Training Colleges, and of teachers for the sake of the clarification of their own thought and argument in teaching. The book is essentially practical, with a large number of exercises of an interesting type.

C.W.V.

NOTICES OF ARTICLES IN FOREIGN JOURNALS.

Journal of Educational Research. Illinois. September, 1923.

In an article on "A Study of Ten Gifted Children whose School Progress was Unsatisfactory," Miss Dorothy Van Alstyne gives details of the individual cases, each of which was carefully studied. The classification of the causes of their unsatisfactory school progress in spite of a high degree of intelligence was as follows : (i) neuropathic tendencies ; (ii) innate character difficulties ; (iii) home environment not normal—too gloomy—emotional disturbances—family prejudices—too much responsibility on the child—too little responsibility on the child—attitude of over-protection on part of parents—influence of older children—spoiling of the child—pressure on the child too great ; (iv) trouble in the school—prejudice against the teacher—fear of the teacher—not enough individual attention, especially in the matter of teaching the child how to study.

In six out of nine of the cases the children had a tendency towards emotional instability.

It is suggested that there is a need for segregation and special treatment for a "neurotic" class.

AN APPEAL.

The Caldecott Community, which was the subject of one of our articles in the last number, is threatened with extinction for lack of funds. The parents of children, even from the poorest homes, contribute substantially, but the continuance of this interesting experiment is largely dependent on private subscriptions.

The Editor of THE FORUM, on behalf of the Community, will be glad to receive any contributions.

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